I. Appendix 1 – Other Conservation Issues

Recommendations for monitoring breeding populations of long legged waders (Herons, egrets, ibises, storks, spoonbills, order Ciconiiformes).

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Purpose and Introduction

This section is intended as a short and general introduction to monitoring long-legged waders (herons, egrets, ibises, storks and spoonbills, all in the order Ciconiiformes). These birds share a number of morphological characteristics, use wetlands for most if not all of their lives, are often colonial nesters and are sometimes social foragers. There is interest in monitoring populations of these animals as a resource in their own right, but also as ecological indicators of wetland function and degree of contamination. It is important to remember that each species and situation will probably require different suite of monitoring techniques, often adapted at the local level. So this is not a cookbook! Perhaps more so than other avian groups, the wading birds also present some particularly difficult challenges to monitoring, and designing a monitoring program therefore requires a greater understanding of the possible pitfalls of various techniques and particularly, interpretations of the resulting data.

While some of the methods described may be useful for other groups of birds, the effectiveness of these methods is unknown for other species. For example, some other superficially similar groups (shorebirds, cranes) may be fundamentally different in their use of space or reproductive biology from long legged waders and so require a very different suite of methods for monitoring.

It is assumed at the outset that the parameter of interest is population size, as it pertains to whatever geographic division you are working in – state, region, county, refuge or even single breeding site. Ciconiform birds are generally most dispersed in the nonbreeding season, and adults become most concentrated in breeding season. From a logistical standpoint, it therefore usually makes sense to estimate population size by estimating numbers of breeders. While this assumption is probably valid, there may be excellent situations for monitoring wintering birds, and these opportunities should not be missed. It is also critical to think about what a population is in this case. The group of birds you actually monitor are undoubtedly a subset of something larger (breeders vs. all birds in the southeastern population, Texas birds vs. the southeast) so be sure to define what you think you are monitoring before starting. Along these lines, remember that wading birds are extremely mobile, and have relatively low breeding site fidelity. With large scale movements possible, one should be careful when thinking about local vs. regional groups of animals. Also be sure that population size is not the only parameter of interest – especially with animals that move a lot, demographic sinks and sources are possible. What appears to be a healthy, growing population may not be replacing itself. So reproductive output and survival are often at least as important as population size as metrics for assessing status, and for use as ecological indicators.

Especially with colonial birds, it is rarely possible to count the numbers of breeding adults. Instead, numbers of nests are usually the actual quantity counted. This is important to realize, since a one-to-one relationship is often assumed between breeding pairs and nests. As below, this assumption can be violated to a very large degree by the timing of counts in the nest cycle, the degree of nest failure followed by renesting, and the degree of asynchrony in the colony.

Most animal monitoring programs typically have important tradeoffs between the spatial scale over which you want information (an entire ecosystem, a particular wetland, a state, or a region or flyway), and the grain of information (the smallest spatial unit – a grid cell, and island, a management unit, a county etc.). This is because it takes much more manpower, money and time to monitor a large area at fine grain than a large area at coarse grain. Grain has a large effect on the interpretation of the information (eg, spatially coarse information often leaves a lot of room for error in total population estimates). For this reason, a monitoring program should only be designed with explicitly stated data needs and expectations, such as the level of population change that you expect to be able to detect.

Wading birds are typically colonial breeders, and their large showy aggregations often leave the impression that they will be relatively easy to quantify. Some individual colonies may be easy to count or estimate, but otherwise this tends to be a particularly difficult group of birds to quantify. As above, their weak philopatry means that unlike seabirds their colonies may move between years in unpredictable ways. Wading birds often nest in multispecies colonies, which can make it difficult to separately count the different species. Colony vegetation is rarely flat and open (though it can happen), and visual occlusion often is a major problem even when counting from aircraft or vantage points. Thick vegetation and the habit of nesting over standing water can make it difficult to impossible to move through many colonies or keep track of where you are in ground surveys. Lastly, many colonies of wading birds are particularly large, and even were visibility is perfect, accurately counting or even estimating 50,000 ibises can be nearly impossible.

Where wading birds nest in small numbers, and they do so in a well defined area, are easy to count, nest in a synchronized fashion, and have little or no renesting, the breeding population is probably accurately represented by the numbers of nests counted. But nearly always, one or more of these conditions does not exist, and the gap between the information that it is possible to gather (numbers of nests or breeding birds at some point in time) and what you actually need (numbers of breeding pairs or total population size) can widen to the point that the monitoring program has to be scrapped. This illustrates clearly that the assumptions you will use in interpreting the data, and the level of accuracy and precision needed must be defined prior to selecting a monitoring method. Further, it is also clear that many of the assumptions should be tested in pilot studies. For example, you may be able to assume that the birds you cannot see in any survey are similar across surveys. But this assumption is necessary to demonstrate if it is critical to the integrity of the survey program.

Monitoring methods

I. Counting nests in breeding colonies

Even if the interest area is broader than a single colony, the methods used for estimating the size of individual colonies are typically the basis for surveys over larger areas. However, it is critical to examine the assumptions you will use in interpreting any count statistic from colony surveys. If numbers of nests is your count statistic, are you assuming that each nest represents two breeding birds? If so, you should probably consider renesting as a confounding factor. Are you assuming that more nests is somehow representative of better conditions? If so, be sure to document the relationship, or perhaps consider a different metric like per nest productivity, or foraging rate. Are you assuming that numbers of nests indicates fluctuations in the population? If so, be cognizant of the low philopatry and amazing movement abilities of these birds, and think about the possibility of your colony being a demographic sink (attracting increasing numbers of birds whose reproduction is not sufficient to offset mortality). Be sure that numbers of nests is the metric you are after.

Several methods exist for counting or estimating nests, but their utility depends largely on the species and habitat involved. Wading birds often nest in multispecies aggregations, so it is important to determine the species of interest. Large bodied, white colored species (Great Egrets, Wood Storks) usually nest in the upper strata or the tops of trees or shrubs, and are relatively accurately counted from aircraft or from aerial photographs. Those that are smaller bodied and white colored (Cattle Egrets, White Ibises, Snowy Egrets) typically nest lower down in the vegetation and many individuals may not be visible from any aerial view. For these species, a combination of aerial counts and some kind of ground truthing or ground based correction of aerial survey may be required. Species that are dark colored (Great Blue Herons, Tricolored Herons, Little Blue Herons, Glossy Ibises) are often nearly invisible from the air, even when they nest in the tops of trees and aerial methods are inappropriate for these species.

Note also that several kinds of information are useful and may be necessary to arrive at a good estimate of colony size. For example, one might repeatedly approach a colony on the ground to find out the optimal time for counting, track phenology and major events in the colony, determine which species are there, and where within the colony they are nesting. Counts or estimates from aircraft might give you a good idea of the numbers of nests of large white colored species, and a ground visit or two might tell you how many dark colored species are there. Major events like partial abandonments, renesting events, severe storms or tides will probably have to be pieced together from a variety of kinds of information, but these can be crucial to the interpretation of counts. For example, weather events (flooding, wind, severe cold) might cause abandonment of a significant portion of a colony or colonies. By performing surveys immediately following these events, and then later on, it is possible to quantify the number of nests abandoned, and the number of renestings. Without this information it will be difficult to interpret survey information alone.

Timing of counts within the nest cycle is critical for estimating numbers of nests, both at any given time, and over the course of the season. Usually, incubation is the best time. During incubation, only one member of each pair is typically at the nest, which allows the simple assumption of one bird, one nest. In contrast, there may be one, two or no adults at the nest during other stages like courtship, egglaying, and chick rearing. If chicks are large, they may look like adults from the air, and grossly skew your counts of nests. So, incubation is the optimum time for estimating nests present.

There are many clues to stage of nesting that may be gathered without actually going into the colony. From the air or other vantage point, birds in incubation often appear very still and ordered. Birds sitting on the nest present a more elongate outline than birds standing. In contrast, courtship in many species is typified by frequently seeing two birds standing in close proximity, a high level of activity including displays, short flights and carrying of nest material. If the colony can be viewed from a close vantage point, noise is often an important clue. Incubation is a quiet activity, interrupted only by occasional mate exchanges, and the noise level will be very low compared to courtship and nestbuilding. All wading bird young are quite vocal, and begging calls in still conditions can be heard for quite a distance around the colony, so the chick rearing period is usually readily identified. Depending on where you are relative to wind, olfactory cues can also confirm that young (and their excreta!) are present.

Time of day is also important in colony surveys, both for visibility and for accuracy in the assumption of one bird, one nest. Even in a relatively synchronous colony that is largely in incubation, there may be some courtship activity and roosting, nonbreeding birds present. These latter animals are most likely to be present and active in the very early morning, and in late afternoon and evening. During other times of day they may be away from the colony foraging, particularly in the morning hours when feeding activity is highest. So counts and surveys are probably best done in morning from about an hour after sunrise to the middle of the day. Time of day has strong influence on the visibility of birds in the colony too. Low sun angle and soft morning light often allows shadows and coloration that help distinguish species, postures, vegetation etc. With higher sun angle and stronger light, much of the detail may become washed out. This is an important consideration in a survey of many colonies if some are viewed in good visibility and others in poor.

Nesting Synchrony.

As you can imagine the degree of synchrony in nests within a colony could be critical to your ability to estimate the numbers of breeding attempts it represents over the course of a season. In some locations, nesting may be relatively synchronous – all nests initiated over the course of a month or so, for example. In that case, the size of the colony might be very well represented by a single count of nests during the middle of incubation. In many cases, however, nesting is spread out over the course of a nesting season. The underlying causes of asynchrony are various, and include age and experience of the individuals nesting, uncertainty in weather and food conditions over the course of the season, and degree of renesting. The importance of this asynchrony to your survey depends strongly on the metric chosen and the level of precision and accuracy that is necessary for your metric. For example, if you are only able to perform one survey during the season, and your single survey misses 40% of the breeding pairs, the survey would be fairly useless. Alternatively, if only 10% of the breeding pairs are active outside of your period of surveys, you may have been able to capture the level of accuracy and precision that you need.

Asynchrony has several possible effects on estimates of nests or breeding birds. In the simplest case, your counts or surveys may start after nesting has begun, and end before nesting is entirely finished, thus missing some nests at either end. The worst case scenario is that you have only a single chance to survey a colony, and little specific information about when to perform the survey – you are likely to be quite inaccurate in this situation.

Your survey program almost certainly will be monitoring nests periodically rather than continuously (but see below), and the vast majority of nest count techniques do not follow individual nests. This means that even if you get identical counts on sequential surveys, these counts may be of different nests. Some nests may start and stop during the time between surveys, and some nests may fail and new ones start up between surveys. This problem can be quite serious – one study showed between 24 and 64% of nests of wading birds were missed or underestimated in this way. What is even more frustrating is that the factors that affect the degree of asynchrony (weather, nest failure rates) vary among years. This means that counts of unmarked nests may not even be an honest indicator of annual change.

Most examples of multiple surveys within a season estimate what is in effect a "peak" count – the maximum numbers of nests active upon the various dates surveyed within the season. While this may be a far cry from the total numbers of nesting pairs, it could be used productively to infer, for example, large degrees of change between years, or steady unidirectional change, especially over the course of many years.

There are several ways to deal with the "asynchrony" problem. First, the degree of asynchrony might not be very high in your colony, meaning date-specific surveys don't miss many nests. Second, in smaller colonies it may be possible to individually tally nests based on location and species as they start and end – in effect coming up with a running total for the colony. Even in large colonies this can often be done at the least for major abandonment events (as above). Finally, one may be able to estimate the true numbers of nest attempts by estimating turnover – in essence the residence time of the nest. This technique is labor intensive, because it involves following the fates of large numbers of individually identifiable nests. If done on the ground it may also introduce large amounts of human disturbance and artificial abandonment into the study (see section on human disturbance). There may be ways to reduce labor by using high resolution aerial photography repeatedly pinpoint and follow individual nests. This is a promising technique, but the numerical procedure for using turnover rates to estimate population size are still in development.

Aerial survey techniques

The most common way to estimate numbers of nests in colonies is to fly over them in a fixed-wing aircraft or helicopter, and count or estimate numbers of nests. This technique has many advantages and has been used for many decades. The advantages include good visibility of the entire colony, rapid assessment, relatively efficient in manpower. The disadvantages include risk to human personnel, relatively short time over the colony counting or observing, snapshot in time, high inter-observer error, high hourly rates, and by themselves yield relatively poor information about nesting phenology and biological events within the colony. Two different functions must be distinguished for aerial surveys. One is aerial counts of individual colonies and the other is the accurate discovery of colonies. Often both functions are desired in large scale surveys, but not always. The methods for discovering colonies are treated in a future section, "Surveys of breeding birds". Here we will focus on the counting or estimating of individual colonies.

Whether in fixed-wing or rotor aircraft, altitude is always a tradeoff. Too high, and you cannot make out individual nests or at least cannot distinguish species. Too low, and the nests go by so fast that you cannot possibly count them or be sure what sections you have counted. Typically, many passes in a fixed-wing at different altitudes are desirable to get a reasonable estimate of the numbers of birds. A good place to start is at about 800' AGL (Above Ground Level), which usually allows the entire colony to be seen at one time. The higher the altitude, the more time that can be spent viewing the colony in a single pass along or around the location. Lower passes can then be made to confirm your suspicions about the species you are seeing, and the nesting stage. Generally passes below 300' give diminishing returns on this, and remember anything below 500' is considered dangerous because there is little or no opportunity to recover from a stall. While this is not true in a helicopter, the lower altitudes may lead to some disturbance of the birds. Airspeed is also a tradeoff for fixed-wing aircraft, since lower speeds can quickly become dangerous as you approach stall speed.

Several kinds of error have been found in aerial counts or estimates of colonies. Counting error can stem from several sources. First, many nests may be hidden by vegetation or at the least occluded temporarily from various angles. The degree to which birds suddenly "peek" out from underneath the canopy or vegetation as the aircraft circles the colony at an oblique will often give the observer a sense of whether there are lots or only a few animals hidden below the canopy, and help them to make decisions about whether to follow up aerial surveys with ground based counts. If ground based counts are used it may be possible to estimate this error through counting specific areas from both ground and air. Large sampling areas can be set up for both ground and air by using visible geographic boundaries or large visible markers (umbrellas, piles of newspaper, trees spray painted with biodegradeable paint, etc). The drawback of these quadrats is that they are time and labor-intensive to set up and count, and natural variation in vegetation throughout the colony may require large numbers of quadrats to accurately represent error due to vegetative occlusion.

A second kind of error has to do with the ability of and variation among humans to count large numbers of targets. Generally, most people underestimate large numbers of objects (>50) in one view, though the degree of error varies widely among individuals. Studies have demonstrated that the degree of error is not predictable from knowing age or experience of observers, and error does not increase in a predictable way with size of colony. It may be possible to quantify this kind of error by standardized testing of individual observers, though there is no published evidence of the stability of individual errors over time. There is a tendency for both observers in a survey to converge towards a common estimate of numbers of nests in subsequent passes around a colony. This is not necessarily desirable, and is a natural social phenomenon rather than any tendency towards increasing accuracy with number of passes. So the advice here is, make multiple passes to get a best estimate from each individual in the aircraft, but don't attempt to compare notes until back on the ground.

Note that the comparison of aerial and ground quadrats (above) could correct for both vegetative occlusion and observer counting error, since ground counts are true one-by-one counts rather than estimates. To a large degree, aerial photographs can also control for interobserver errors – digital or film photos are typically projected large and white targets counted exactly using a click-counting device. However, photo counts include vegetative occlusion error, and it is usually necessary to couple photo and ground counts of marked quadrats to measure this kind of error. Photos should be taken from the angle that yields the largest number of visible birds, which may not always be from overhead. In multispecies colonies, confusion of species can be another source of error. Even experienced observers may have trouble distinguishing white colored species like Wood Storks and Great Egrets, or Snowy Egrets and White Ibises. This problem grows with increasing density of nests and spatial interspersion of species. Often this problem can be largely alleviated by close inspection of the colony, either by flying low enough to distinguish species, or by visiting the colony on the ground. In many cases, different species will nest in fairly distinct areas or clumps, and the delineation of these areas may be possible through an iterative use of aerial and ground surveys. It is important, however, that the persons doing aerial and ground counts are the same individuals, to make maximum use of memory of landmarks and other distinguishing characteristics.

Ground counting methods for colonies

By far the simplest and most unambiguous method for counting nests is to walk into a colony and count them all. This can be done, especially in smaller colonies where the walking is relatively easy. Keeping track of where you are may be difficult, but can be facilitated by the use of flagging or socks full of flour slapped against trees. In most cases this method is best accomplished with a team of people who move systematically through the colony in a series of parallel passes, the edges being maintained by the same person on adjacent passes. The drawbacks of this method are that it is labor intensive, especially if done multiple times, it introduces human disturbance directly into the colony, and there may be important problems with identification of nests or young because the parent has flushed. For example, nests of Tricolored Herons, Little Blue Herons, and Snowy Egrets cannot be distinguished during the egg stage, and Cattle Egrets can often be confused with these. During the nestling stage, Snowy Egrets, Cattle Egrets, and Little Blue Herons can require quite a bit of experience to distinguish. Nonetheless, this technique gets away from most of the problems of counting error and vegetative occlusion. A variation on this method is to sample the colony using predetermined belt transects or circle plots. While subsampling the colony may be a wise alternative in relatively uniform medium and larger colonies, there is no evidence to date that such techniques actually encompass the large degree of spatial variation in species and densities that are typical of multispecies colonies.

Colonies may also be counted from vantage points (trees, bridges, towers, promontories and bluffs, etc.) though for large colonies these typically only offer visual access to a small portion of the colony, and rarely are directly overhead. The farther from the colony these vantage points are, the more like an aerial survey they become, with all the attendant problems (except for price). Nonetheless, this method has proved quite valuable in a number of situations.

In a surprising number of situations, human activities (dredge or mining spoil, or old dikes) can create extremely thin, elongate islands that become colonies. These may be so thin that observers can see all birds from one or both sides, making it possible to accurately count all nests from both sides. These situations are quite enviable, since they avoid many of the problems of both aerial and ground surveys.

For small colonies, numbers of nesting birds can sometimes be accurately estimated by scaring the birds off their nests at once. This usually requires a rapid approach, and use of some loud engine or noise to flush the birds (airboat, loud vehicle, popper shells etc.). This has proved quite useful in situations where lots of small islands must be surveyed (Everglades, Florida Bay, dredge spoil islands) and visibility from the ground is occluded. Observers must be reasonably sure that the birds being scared up are in incubation for this to work – if not, the assumption of one bird, one nest is violated. This technique does introduce human disturbance, but the disturbance is quite rapid (<5 minutes), and does not involve entering the colony.

Several authors have examined the “flight-line” method. This technique uses the numbers of birds entering and leaving the colony as an indicator of how many nests are present. Typically observers are placed around the colony, and they quantify the rate of entering and leaving by different species over a standardized time and time of day. This technique avoids disturbance, has relatively low interobserver error in counts, and can accurately detect dark colored and rare species. However, flight rates are known to change radically with nesting stage and distance to food, and there is some evidence that flight rates of the same species in the same colony at the same stage are unstable between years. The flight line method might be profitably used to identify species composition, or to detect very large differences in sizes of colonies (orders of magnitude), but is probably not a very good tool for yielding accurate counts of nests.

Human disturbance effects

Many of the techniques discussed above involve disturbance of the nesting birds, and the question is always one of degree. Except in extreme situations, the effects of human disturbance are often difficult to quantify, and there is relatively little information on the effects of researcher or monitoring disturbance. Several points are clear, however. First, nest failure and perceived presence of predators is a powerful influence on future choice of nest site in birds, so the liability of colony entrance may extend well beyond effects in the current season. Second, the reactions of birds at the time of disturbance are not necessarily a good indicator of biological effects. In storks and penguins, it has been demonstrated that birds that abandon nests as a result of disturbance show no behavioral reaction at the time. Conversely, birds that show obvious reactions to disturbance (flushing, calling, flying away from the site) often nest successfully.

Aerial survey work on wading bird colonies seems to have no obvious effect in terms of flushing or abandonment. There are important exceptions – very low passes (<300 feet agl) and repeated passes, especially in helicopters, are likely to cause disturbance. Similarly, hovering in place over nests at low altitude is a bad idea.

Entering colonies is obviously at the other end of the disturbance spectrum. In many cases, even repeated disturbances by researchers walking in colonies do not seem to have a measurable effect on nest success, but this result may be more the exception than the rule. All species of wading birds flush from their nests at various distances, and remain off their nests in a halo around researchers that extends at minimum 30 meters. Where aerial nest predators are present (crows, vultures, raptors, blackbirds and grackles), individual predators will learn quickly that they can dart in and grab eggs or nestlings while the parent is off the nest. If it turns out that a single blackbird or crow is following researchers it may be possible to trap or kill that bird. But generally there are multiple animals and there are no proven methods for dissuading. Work in the colony should probably not be attempted where nest predators follow researchers.

Timing of disturbance within the nest cycle is critical. Where nests and colonies have been approached during courtship and even egglaying, mass abandonment can occur, and there is evidence in Black-crowned Night-herons that human entry into the colony significantly reduced new nest starts within the season. For this reason, researchers should use all available cues (aerial reconnaissance, sound, looking for courtship from outside the colony, breeding color on adults) to determine stage of nesting prior to entering the colony. The other critical time is when chicks get old enough to be mobile

(14 – 25 days of age, depending on species). In most species, a quick approach to the nest at this time will elicit an awkward scrambling, with many birds falling out of nests and into the water. Ibises are particularly prone to run away rather than climb up out of the nest, and researchers can be confronted with a “black wave” of young moving away from them. It is not clear that these young nestlings are able to get back into the nest, and the effects on survival could therefore be severe.

With timing in the nest cycle so critical, either intra- or interspecific asynchrony can present a recipe for disturbance effects. For this reason, researchers should very carefully evaluate the degree of synchrony before attempting work within a colony. In cases where different species or cohorts are geographically isolated within the colony, there is the possibility of working around the parts that are in a critical stage. In others, nesting may be so dense or interspersed that entry by researchers should be ruled out.

Time of day of disturbance is also important, particularly for thermal stress on eggs and chicks. Generally, chicks and eggs are more susceptible to heat stress than they are to cold, though freshly hatched chicks can become chilled very quickly. Early morning is usually a good time to enter colonies because sun angle is low, and heat stress minimal. A good rule of thumb is that if a piece of metal in full sun is slightly more than comfortably warm to the touch, it is too warm to go in.

II. Population monitoring over large geographic areas

Where the goal is population monitoring, a single colony is rarely the focus of interest, and many colonies must be monitored over a large geographic area. This may be a single refuge (tens of km^2), entire states, or regions (many thousands of km^2). Although there are many sources of error in quantifying numbers of breeding birds in individual colonies, it's important to remember that the ability to detect changes in the larger population may be quite reasonable. The main effect is that the larger sample size of colonies means that specific problems at individual colonies become diluted by overall trends. However, it’s also important to remember that systematic errors (types that occur at all colonies) can be propagated and magnified with larger sample size. Attention to design, consistency in treatment, and multiple sources of information are the keys to making a large-scale survey work.

As above, many species of wading birds have low breeding site philopatry, and it is not possible to rely on specific colonies as indicators because they may move unpredictably. So a critical function of the survey is to locate the colonies. Since colonies move around, it is also very important to make any survey geographically systematic, to be sure you have discovered colonies if they are present. If monitoring white colored colonial species, the method of choice will be some kind of aerial survey due to the efficiency of this method over large areas.

Coverage of the entire study area is by far the preferred method for surveying. The reason is that colonies come in a very wide variety of sizes and the extremely large ones (>5,000 pairs, for example) are quite rare, both numerically and geographically. These large rare ones, however, have a very disproportionate effect on total population size, and may be missed by sub-sampling an area.

For relatively small areas (<200 km^2), 100% coverage is a quite reasonable and cost-effective goal if using aerial methods. The mix of flight speed, altitude, and spacing will vary with characteristics of the habitat, and aircraft, but systematic coverage patterns are straightforward. In most cases, 100% coverage can be achieved by flying a series of parallel straight lines (transects) for which the views on adjacent transects are overlapping. To be efficient, one observer should be on each side of the aircraft, and transects are most commonly oriented in an east-west direction to ensure that sun glare is minimized for the views on the side of the aircraft. Usually, a pilot study is required to determine the spacing between transects. One way is to fly naive observers closer and closer to known colony sites until the colony is seen – distance between transects should be something less than twice this distance. This distance is likely to be different in different habitats because of vegetation and visibility, and may even need to be adjusted within a season as vegetation leafs out in the spring. Altitude is integral to this distance, since the higher up you go, the farther you can see, and the poorer detail you can make out. As a starting point, try 800 feet agl, and descend or ascend as the habitat in the area being surveyed requires.

Once a colony is located, it is usually circled, location noted, counted, and pictures taken. Depending on the colony and budget, it may be desirable to revisit the colony in the near future to be able to gather more information on species composition, and stage of nesting. As above, it is very advantageous to have the same people in the aircraft do the ground visit.

Over large areas, 100% coverage may not be possible. Consider, for example the entire state of Florida, or the southeastern United States. The cost of flight time alone would exceed the annual budget of most state wildlife agencies. Sub-sampling becomes a likely alternative, but has the problem of missing large and regionally important colonies. One sub-sampling scheme might be to fly every other transect, or at least to increase transect spacing regularly to the point that some sections are effectively not surveyed. If colonies (and particularly large colonies) were distributed relatively equally throughout the study area, this method would probably give a good idea of population trends.

However, colonies are usually concentrated in specific habitats (areas of high coastal and freshwater marsh, for example) within large geographic areas. So an alternative is to fly 100% coverage surveys in several large but separate areas. This method allows the generation of a standard error in population size that applies at a large geographic scale. This design also may allow researchers to target areas for survey that are more likely than others to have colonies. For example, within Florida one could target the Everglades, the St. Johns River marshes, Lake Okeechobee, and the phosphate/lake district of central Florida. In this way, a larger proportion of the nesting population is probably encompassed as with an “every-other-transect” survey design, with the same effort and money. Such a monitoring plan would not yield the location of all colonies in the state, but it would be very powerful for detecting population trends at a statewide level.

Within such a sampling scheme, it is important to concentrate effort in improving counts on the large colonies. This is because of the disproportionate effect that error in these colonies can make on the population or trend estimate. Repeated visits and photographs, ground counts, quadrat counts and turnover measurements should all be disproportionately directed at the larger colonies.

Non-aerial methods

Not all species and habitats can be effectively monitored using aerial methods. This is true for dark-colored species, and for many colonies in sub-canopy, dense vegetation.

For example, most colonies of Little Blue Herons and Tricolored Herons are below canopy, and in the case of mangrove islands, are virtually undetectable from the air. These species can be systematically monitored, but systematic access to the potential nesting sites is critical. For example, the thousands of mangrove islands in coastal Florida and the Keys are for the most part approachable by boat, and so may be checked for colony activity, albeit with higher manpower and equipment time than the aerial methods. Similarly, the thousands of tree islands typical of the freshwater Everglades can be systematically approached by airboat, and conventional motorboats can be used to access most of the hundreds of dredge spoil islands along the Intracoastal Waterway.

The ability to survey some species with non-aerial methods may also be enhanced by pinpointing vegetation and habitat that birds are more likely to nest in. For example, in the Everglades willow tree islands are strongly preferred over other kinds of tree islands, and small (< 5 ha) tree islands are strongly preferred over other types. A pilot study to identify preferences is clearly a first step in this process, but the wide availability and power of satellite coverage and Geographic Information Systems may enable a large reduction in the area searched.

III. Monitoring reproductive success

Reproductive success information is of interest for several reasons. First, reproductive information may be critical to projecting future population trends. Knowing the current or past size of the breeding population and measuring trends is essentially a reactive way to manage any wildlife population, and accurate prediction is clearly preferable. Future population size can be modeled relatively easily by knowing key demographic parameters like age-specific survival, population size, fecundity and age at first reproduction. Unlike some groups of birds (eg, extreme r or k selected species), there does not appear to be any one or even two of these parameters that have a dominant influence on wading bird demographics.

Reproductive parameters have also been used as indicators of various aspects of wetland habitats. All good indicators have a strong link between the parameter measured and the attributes of the ecosystem they are supposed to be indicative of. Reproductive parameters can unfortunately be a summary statistic that reflects many inputs – predation, disease, food resources, and weather for example. It is possible to collect meaningful data, especially if the parameter is chosen carefully. Nest success information may be useful if causes of nest failure can be accurately identified (eg, weather losses, predation, abandonment because of food limitations). Clutch size can be a useful indicator of resources available just prior to egglaying. Size-specific mass of young can be a useful indicator of food available at the nestling stage. So where reproductive parameters are used as indicators, researchers should be careful in picking the reproductive parameter to be used, and in establishing a link with the attribute indicated.

Reproductive information can sometimes be collected without entering the colony. For example, young per successful nest at specific ages and occasionally clutch size can be collected from a helicopter or vantage point. However, in the majority of cases researchers need to enter the colony to collect reproductive information.

As under Human Disturbance (above), researchers should plan visits to reduce thermal stress, possible predation and scavenging of nest contents, and total time in the colony. Researchers should be well versed in nest and chick identification, and have a predetermined protocol for data collection and time spent in the colony. Many colonies are dense and features clearly visible from the outside or from an aerial view usually disappear once inside. So researchers should mark their paths well.

Most kinds of reproductive information require sequential visits to marked nests. Some colonial birds are known to have higher predation, exposure or lower densities on the outside of the colony than the inside, and it is therefore advisable to mark nests across this gradient. Nests can be marked using a variety of tags or marks, but it is important to place the marks out of the way of excreta, and far enough from the nest that the tag does not become buried or woven into the nest. Many nests are too tall to see into – the use of an adjustable mirror on an extendable pole can be a critical tool in this endeavor.

Commonly measured parameters include nest success (probability of fledging one young, measured either directly or estimated using Mayfield's method), clutch size (measured at finish of laying), hatching success (young hatching/eggs available to hatch). Young ciconiform birds usually leave the nest long before they are capable of flight or leave the colony, so the definition of fledging is different than in passerine birds. Researchers typically designate a nest as successful at the point that young can no longer be readily identified with a nest (for example, 14 days of age for small day-herons and ibises, 28 days for Great Egrets and night-herons). Brood size at this point could be used as a measure of nest productivity.

Taxonomic Treatment of Great White Heron

The Great White Heron is currently treated as a polymorphic subspecies (Ardea herodias occidentalis) of the West Indies and extreme south Florida of the Great Blue Heron, with the white morph predominating in Florida Bay and the Florida Keys. The "Wurdemann's" Heron, sometimes thought to be a hybrid form, but more likely a dark morph of the Great White Heron, varies from a typical Great Blue Heron of the southeastern U.S. subspecies (A. h. wardi) by a white head plumage, most along the Lower Florida Keys, to almost being identical to typical Great Blues except for having Great White morphological features (reduced or no occipital plumes, grayer overall plumage, larger overall size, heavier bill), most in Florida Bay and the Upper Keys.

Whether or not typical Great Blue Herons actually nest in extreme south Florida remains unclear, but they do north of Florida Bay and many northern populations winter in Florida Bay while local breeding is underway (ranging from September to February). Whatever the dark plumaged birds are taxonomically that nest in Florida Bay and the Florida Keys, they are mostly segregated from white plumaged birds, sometimes even on the same nesting island. In addition, the results to date that suggest 2-4% of all heron pairs in Florida Bay and the Florida Keys are mixed demonstrates that these taxa at least are not light and dark morphs in same way as found in several species of raptors and possibly Reddish Egrets (for the latter at least in Florida, but see below). In addition, evidence exists that these mixed pairs tend to be relatively late nesters and as of yet the more extreme Wurdermann's form (dark body plumage with white head plumage) has not been known to backcross with either Great Blue or Great White populations and therefore may not be reproductively viable. The mechanism that might explain why segregation occurs between Great White and Great Blue Herons is not known, but the evidence points to Great White Heron being a full species and certainly not a morph and possibly nor a subspecies of Great Blue Heron. Studies in the relative timing of nesting between sympatric forms, genetics, morphology, and foraging between these two taxa seem warranted, especially since the Great White Heron, is among the highest priority long-legged wading taxa in North America and would be better highlighted as such if it legitimately was treated as a full species.

The American Ornithologists' Union's (AOU) 1973 reclassified the Great White from a "good" biological species to a subspecies, restricted in breeding distribution in some treatments to only extreme south Florida and in other treatments to include the all the polymorphic populations of the West Indies and islands bordering the Caribbean Sea. However, both popular and technical treatments subsequently have led to the widely held perception that Great White Heron is simply a white morph not unique in any other way from the continentally widespread and common Great Blue Heron. This in turn has led most recently to conservation efforts in south Florida not recognizing the potentially high vulnerable status this taxon may be in, as well as not recognizing this taxon as a potentially important environmental indicator with its unique trophic status as a top predator in an increasingly degraded environment of south Florida. The 1973 reclassification itself does not support these treatments, but the confusion is understandable given various uses of the term "morph" in taxonomy, the lack of any substantial update to subspecies treatments since the Fifth Edition (1957) Check-List of North American Birds, and how past and more recent evidence could be applied to alternatives to the conventionally applied Biological Species Concept, such as the Phylogenetic Species Concept (PSC). A separate commentary will be provided examining past taxonomic treatments for Great White Heron, attempts to correct the widespread perception that Great White Heron is only a white morph by resurrecting its most recent AOU treatment as at least a subspecies under the Biological Species Concept (BSC), and suggests that the Great White Heron may qualify as a "good" phylogenetic and even a biological species. Recommendations are provided for future monitoring and research to help resolve issues separating treatment of this taxon between the BSC and PSC and to determine the appropriate level of attention Great White Heron should receive from a conservation perspective.

Wetland Losses by BCR

The loss of estuarine and freshwater emergent wetlands is likely the most serious threat to waterbird populations in the Southeast U.S. Region. Historically supporting a large percentage of these habitat types in entire United States, huge declines have occurred for the past three decades. Data are available from several sources regarding wetland losses in the U.S. These losses are summarized for BCRs across the Region in Table 1.

Emergent estuarine wetlands in BCR 31 (Peninsular Florida) declined by BCR 31 - Peninsular Florida by 1,600 acres between 1974 and 1998, primarily due to urbanization. There were an estimated 251,500 acres of estuarine emergents in BCR 31, accounting for approximately 6.4 percent of the total estuarine emergent wetland area in the conterminous U.S. By 1998, salt marsh vegetation made up less than one third of the estimated intertidal (saltwater) wetlands in Florida. Other types included mangroves, non-vegetated beaches, shores, bars, shoals and flats. Estuarine salt marsh was lost to deepwater where the vegetation was scoured or buried by sediments, or was washed away by rising water or turbulent wave action. However, the dominant factor resulting in a decline of salt marsh wetland was the conversion to estuarine shrubs primarily along the Gulf coast in Sarasota, Charlotte, Lee, Collier, Monroe and south Dade counties. In 1998, the average size of estuarine emergent wetland in Peninsular Florida was 22.9 acres. A continual downward trend in acres of estuarine emergent wetlands has been documented since the 1950s.

Freshwater emergent wetlands in BCR 31 account for 10.5 percent of the all freshwater emergent wetland area in the conterminous U.S. Freshwater wetlands declined by more than 10% between 1974 and 1998. This was the largest decrease of any wetland category sampled within the state. Agriculture was responsible for some of the emergent wetland loss to upland land uses. An estimated 98,400 acres of emergent wetlands were lost to upland agriculture (gross loss). Of the 98,400 acres lost, 60,100 acres of agricultural upland elsewhere in the state, were converted to emergent wetlands to offset some of the losses (wetlands gains). Wetland restoration, creation, land retirement or set aside programs were responsible for many of these changes in land use. A net loss of 38,300 acres of emergent wetland was attributed to agricultural land use.

That accounted for 63 percent of the emergent wetland lost to upland. There was also substantial conversion of freshwater emergent wetland to shrub wetland between 1985 and 1998. An estimated 286,900 acres of emergent wetlands were re-classified as shrub wetlands. Historically there have always been small conversions between wetland types (i.e. shrub to emergent and emergent to shrub) based on duration and intensity of flooding or frequency of wildfires. Changes of the magnitude that occurred in Florida between 1985 and 1998 were indicative of prolonged periods of drought that allowed woody plants to become established in emergent wetlands, or the invasion of shrubs such as Brazilian pepper or *Melaleuca*.

BCR 26 (the Mississippi Alluvial Valley) was defined for the purposes of this analysis as not extending south to include the extreme lower Mississippi River Delta and mouth as it enters the Gulf of Mexico. Therefore there were no estuarine wetland types included for this BCR. However, freshwater emergent wetlands in this BCR account for about 2.6 percent of all freshwater emergent wetland area in the conterminous U.S. and declined by more than 6% between 1983 and 1998. It was estimated that 85 percent of these losses between 1983 and 1990 were due to agricultural conversion. Land uses changed during the 1990s and some of the emergent wetlands losses in BCR 26 were offset by clear cutting forested wetlands. This re-classified many areas as emergent (or shrub) wetland, but it is doubtful they will remain as emergent marshes as these forested areas are re-planted to tree species. Other emergent wetlands in this region were lost to agricultural development. There are an estimated 4.3 million acres of land in some type of cultivated rice production (either land in dry crop rotation or flooded for rice) within BCR 26. Small sections of emergent marshes were “squared off” as portions of agricultural fields or wet sites that had been partially drained were completely drained for agricultural production.

In 1985, there were an estimated 361,600 acres of estuarine emergent wetland in BCR 37 (Gulf Coast), primarily concentrated along the upper and mid-coast (Sabine Lake to Aransas Bay). These wetlands declined by about 850 acres per year between 1985 and 1992. Losses resulted primarily from the conversion to estuarine subtidal bays; palustrine emergents; lacustrine reservoirs; urban and other types of development.

The loss of estuarine marsh to open subtidal bay occurred primarily between Freeport and Port Arthur and was associated with the submergence (drowning) and erosion of wetlands probably due to faulting and land subsidence resulting from the extraction of underground water and oil and gas. Loss of estuarine intertidal wetlands to upland "other" and conversion to palustrine emergents resulted partly from the construction of dredge spoil compartments along the Gulf Intracoastal Waterway and other ship channels, and also from construction of roads, levees, etc. that altered original tidal hydrologic characteristics.

BCR 37 supported 616,400 acres of freshwater emergent wetland in 1985, which sustained an average annual net loss of 6,360 acres. This was the largest acreage change for any wetland category in this geographic area. On the upper and mid-coast, conversion of emergents to scrub-shrub resulted from invasion by the introduced Chinese Tallow-tree. While losses of emergents to lacustrine open water were due to reservoir construction. The loss of freshwater wetlands to agriculture was widespread along the coast and was greatest in Chambers, Harris, Brazoria, Fort Bend, Wharton, Matagorda, and Refugio Counties where there were an estimated 1,742,000 acres of land in some type of cultivated rice production (either land in dry crop rotation or flooded for rice). Freshwater wetlands, particularly palustrine farmed and palustrine emergents, were also lost to urban and rural development, especially in the Houston and Beaumont-Port Arthur areas. Loss to rural development was greatest in Orange, Jefferson, Chambers, Galveston, Harris, Brazoria, and Nueces Counties

Estuarine emergent wetlands suffered substantial losses between 1974 and 1987 in BCR 27 (Southeastern Coastal Plain), declining by over 5 percent. These losses were due to coastal development in Virginia, the Carolinas, the panhandle of Florida and losses sustained by coastal marshes in Louisiana. By 1997, the remaining estuarine emergent wetland in BCR 27 made up 69.8 percent of the total estuarine emergent area in the conterminous U.S. Estuarine wetlands have been declining steadily since the mid 1980s. Although there continues to be development pressure in certain regions, overall, estuarine wetlands benefit from Federal and State protection measures. The most common types of wetland changes observed since the late 1990s have been associated with coastal erosion, storm surge or deposition of sediment in coastal areas.

Although Hefner et al. (1994) indicated freshwater emergent wetlands in BCR 27 showed a net increase from the mid 1970s to the mid 1980s, that analysis included data from the states of Louisiana, Mississippi, Arkansas and all of Florida. Losses of freshwater emergents were offset by conversion of large tracts of forested wetland to emergent wetlands. This analysis has excluded the Mississippi Alluvial Plain portion of AR, LA and MS as well as Peninsular Florida and indicates freshwater emergent wetlands sustained substantial losses during this time period. Throughout the 1990s, freshwater emergent wetlands continued to be one of the categories suffering the largest net losses. This was particularly true in the southeastern coastal plain where freshwater emergent wetlands were lost to agricultural development, as well as urbanization. In 1998, freshwater emergent wetland in BCR 27 made up about 7.1 percent of the total freshwater emergent area in the conterminous U.S and the rate of decline was still 1.0 percent per year.

Contaminants

Organochlorine Pesticides

The organochlorine pesticides include DDT and its breakdown products (DDE and DDD), toxaphene, aldrin, dieldrin, heptachlor, chlordane, mirex, lindane and other compounds. Valuable recent reviews of the avian toxicology of these compounds are available (Blus 1996, 2003, Peakall 1996, Wiemeyer 1996). They range in toxicity from extremely toxic (e.g. endrin) to only slightly toxic (e.g., DDT and lindane), and DDT has the well-known sublethal effect of impairing calcium metabolism in the shell gland of the female (which in some species led to eggshell thinning severe enough to cause egg breakage during normal incubation). Most of these pesticides were banned decades ago due to their persistence in the environment, strong tendency to bioaccumulate in wildlife, and toxic effects on wildlife. While concentrations region-wide continue to decline following the ban of these compounds (Schmitt 1998), they remain a concern for waterbirds in the Southeast at historical manufacturing sites and high-use areas (typically associated with produce or cotton) due to their persistence.

A much publicized (Williams 1999) but rare event was the mortality of over 20 species of birds in re-flooded agricultural fields north of Florida's Lake Apopka. In the fall of 1998 through the spring of 1999, natural resource managers at the site pointed to dieldrin, toxaphene, DDT and DDE as the primary causative factors in the death of hundreds of birds which ate fish which had bioaccumulated these compounds from soils after the area was flooded. The American white pelican, wood stork, and great blue heron were most affected and accounted for 80% of all reported deaths. In addition to mortality, hundreds of additional birds ingested quantities of pesticides that potentially impacted their future reproductive output (Anonymous 2003).

Most organochlorine pesticides are no longer in use, and the only practical management at this time is cognizance of highly contaminated areas, impacts of manipulating these areas, and potential consequences of making them attractive to wildlife. Because of the tremendous importance of wetland restoration in the Southeast for wildlife conservation, a tiered approach of site-specific risk assessment is recommended so projects can proceed. Managers should 1) investigate prior cropping history and pesticide use for a parcel of interest; 2) analyze soil for compounds identified by that review if warranted based on the pesticide use history; and, 3) conduct simple avian risk assessments of the soil chemistry data by modeling expected concentrations in waterbird food and comparing those to avian effects concentrations. Wildlife toxicologists and risk assessors can provide this assistance, including the Environmental Contaminants staff of the U.S. Fish and Wildlife Service field offices throughout the region. Results of a risk assessment can be used to inform managers of potential impacts so that appropriate techniques and monitoring are employed.

Petroleum

Oil and other petroleum products enter the environment from many permitted releases as well as accidents. These products are typically complex mixtures of many individual hydrocarbon compounds and associated chemicals. While chronic low-level oil pollution exists in many waterways, the primary concern for waterbirds are sources sufficient to produce floating slicks that piscivorous birds must pass through to forage. These sources include petroleum extraction, refinement, and waste disposal sites as well as spills from pipeline, over-water, and over-land transport. Oil has caused mortality of many species of waterbirds in the southeast, most frequently loons, pelicans, and wading birds in numbers between a few to about a hundred per event.

Impacts to birds result primarily from external exposure through loss of weatherproofing and insulation properties of feathers. This often leads to hypothermia, exhaustion, starvation and drowning (Rocke 1999). Oil is also an irritant to eyes, the oral cavity and gastrointestinal tract and can cause systemic injuries upon ingestion. Of particular concern for waterbirds is the avian egg's particular vulnerability to oil; even quantities as small as one or two drops can kill the developing embryo (a particular concern in nesting colonies of waterbirds during the incubation period when small amounts of oil on feathers of adults can be harmful to eggs) (Jessup and Leighton 1996, Albers 2003).

Prevention of exposure should be the focus of addressing oil on the local level. The Oil Pollution Act of 1990 required Area Contingency Plans to be developed throughout the U.S., and there is a component of each plan dedicated to identification of sensitive habitats and species at risk of oiling. Work on the local level to get important waterbird habitat (especially the location of densely populated nesting colonies) identified in these plans is recommended so that they will be known to those responsible for oil spill planning and actual responders. In North Carolina for example, colonial waterbird sites identified by natural resource managers are noted on response maps and identified as among the highest priorities for response planning. Also, major oil and hazardous materials shipping, storing, and handling facilities are required to develop Facility Contingency Plans; natural resource managers have the ability to help ensure that important waterbird habitats are identified as priorities for protection in these plans too. The Marine Safety Offices (http://www.uscg.mil/vrp/maps/msomap.shtml) of the U.S. Coast Guard are responsible for coordinating this effort.

Clean-up of oil once released and hazing of wildlife away from spilled oil are important management tools. At some production facilities, oily wastes stored in evaporation lagoons or oil / water separation pits can harm wild birds. Oil pits are also used to contain spilled oil and can be an attractive nuisance to waterbirds. Solutions to the danger posed by oil pits include removal or remediation of pits, use of closed containment systems for oily wastewaters, use of effective bird deterrents or exclusionary devices such as netting, and clean-up of accidental spills (Ramirez 1999).

Mercury

Mercury, like all heavy metals, is a naturally occurring element, but it can become significantly enriched through anthropogenic actions including coal combustion, waste incineration, chemical production, and production and disposal of mercury-containing equipment (batteries, switches, manomoeters, barometers, thermometers). In the Southeast, pulp and paper mills and chlor-alkali plants are important historic sources (mercury is typically not a part of their processes now) with residual contamination present at many of these facilities. In addition to these sites, atmospheric transport of airborne mercury is a nearly ubiquitous source of this element in aquatic systems. Because it is biologically nonessential, does not degrade like organic compounds, tends to accumulate in aquatic food chains, and is capable of a variety of toxic impacts to birds at concentrations known to occur in the environment, mercury is an important contaminant for the waterbird manager's consideration.

Unlike the new generation pesticides and oil, avian die-offs from mercury are unusual. Mercury is more a concern from accumulation of concentrations that can impair nervous system function, decrease productivity, and alter immune function. Dietary concentrations as low as 0.5 parts per million (ppm)-dry weight (~0.1 ppm wet weight) have been associated with adverse reproductive impacts to sensitive avian species (Heinz 1996). Because this concentration is frequently met or exceeded in fish throughout the southeastern U.S., fish-eating birds have been a focus of mercury impact assessment. Nowhere has this been investigated more than the Everglades ecosystem.

Evaluation of the significance of mercury to waterbirds in the Everglades has included monitoring, feeding studies, and risk assessments. The simplest approaches have compared measured mercury concentrations in fish or bird tissues to literature-derived estimates of avian hazard levels of mercury. Several of these approaches have indicated risk to waterbirds (Sundlof et al. 1994, Beyer et al., 1997, Sepulveda et al. 1999, Duvall and Barron 2000). Perhaps the most compelling indication of risk comes from work where exposure and effects were determined through feeding studies to elucidate the great egret's particular sensitivity to mercury. Captive great egrets on a fish diet augmented with mercury at 0.5 ppm wet weight had reduced appetite and growth, and altered immune function and behavior (Bouton et al. 1999, Spalding et al. 2000a, 2000b); this concentration in the experimental diet is similar to forage of wild egrets in the Everglades (which averaged of 0.41 ppm wet weight in one estimate based on samples collected from 1993 to 1996) (Frederick et al. 1999). Although there are important atmospheric sources of mercury on global and regional scales, analyses of waterbird tissues in the Everglades reveals mercury concentrations in feathers that are very high relative to other areas and which tend to accumulate with growth of feathers of nestlings, indicating important local mercury sources and enrichment (Sepulveda et al. 1999). While this is a concern, mercury concentrations in south Florida waterbirds appear to have peaked in the late 1980's and early 1990's following a pronounced increase in concentrations beginning in the 1970's (Frederick et al. 2004). Recently, several investigators have documented strongly declining mercury concentrations in great egret eggs and feathers in the freshwater Everglades which indicate a significant decline in mercury availability in the wetland food web since the mid-1990s, possibly because of decreased local inputs (Rumbold et al. 2001, Frederick et al. 2002).

Because mercury does not degrade, clean-up of existing sites with elevated concentrations and prevention of additional inputs are the only practical control mechanisms. Managers should consider local mercury sources and existing concentrations at important waterbird habitats. Important local sources with the potential to impacts waterbird habitat should be evaluated for remediation. Because accumulation of mercury in animals is at least temporarily enhanced when terrestrial habitats are flooded, consideration of levels in soils should be evaluated prior to impounding water for waterbird habitat (Franson 1999b). The format for considering this issue is identical to that outlined above for evaluating potential pesticide impacts at wetland restoration sites.

Lead

Lead is also a biologically non-essential heavy metal. While it has many sources in the environment, including fossil fuel combustion, vehicle emissions, and industrial effluents (Pattee and Pain 2003), lead objects such as bullets, shot, and fishing tackle that are the main concern for birds. Once ingested, these large doses of lead are degraded by the acidic conditions of the gastrointestinal system leading to chronic exposure of high lead concentrations and disruption of many physiological systems. The prohibition of lead shot for waterfowl hunting in the United States, phased-in with the start of the 1987-88 hunting season, certainly reduced exposure to waterbirds, but lead shot ingestion remains the primary source of elevated lead exposure and poisoning in most birds (Scheuhammer et al. 1996, Franson 1999a). Exposure persists due to the large stores of lead in wetland and shallow open water habitat from decades of lead shot use, continued deposition in uplands and wetlands from current permissible uses (upland game bird hunting and target shooting), and noncompliance with regulations. Rails and coots are among the waterbird species at most risk from shot ingestion (but they are far less at risk than waterfowl) although lead poisoning has affected almost all waterbird species (Franson 1996, 1999a, 1999b).

Another source of ingestible lead items that have poisoned waterbirds is fishing gear such as split shot, jig heads, and sinkers (Scheuhammer et al. 1996, Franson et al. 2003). While this is less of a problem on the wintering grounds of the Southeast estuarine and marine environments than the northern breeding lakes, loons, brown pelicans and double-crested cormorants have been affected by ingestion of lead fishing tackle in our region (Franson 1999, Franson et al. 2003).

Lead objects in soils and sediments may require tens or hundreds of years to breakdown, dissolve or be buried under cleaner materials. Accordingly, minimizing inputs is advisable. Three management approaches should be considered for important waterbird habitat with regard to lead objects that can harm waterbirds. First, encouraging use of nontoxic shot and fishing materials is advisable. While nontoxic shot is mandatory for waterfowl and coot hunting, the other shot options (bismuth-tin, steel, iron-carbon, tungsten-bronze, tungsten-iron, tungsten-matrix, tungsten-nickel-iron, tungsten-polymer, tungsten-tin-bismuth, tungsten-tin-iron-nickel) and fishing tackle options can certainly be promoted as viable options to lead materials for nonwaterfowl hunting, target shooting, and fishing. Second, identification of problem areas either from avian mortality reports or knowledge of historic and current lead shot use is advisable. Third, in areas of known high shot density where mortality has been a problem, clean-up or management options can be evaluated. Management to plow or till shot deeper into the soil profile has worked to reduce exposure to some ground-gleaning species. Flooding to eliminate pathways for waterbird foraging can also work, but this may lead to enhanced exposure to waterfowl using these areas. Some efforts continue on regional and national scales to reduce use of lead fishing sinkers and lead shot in nonwaterfowl hunting.

Site-specific Pollutant Identification

A region-wide review of important pollutants like this will cover issues that may not be important locally as well as miss issues that may be important locally. Environmental risk assessors, toxicologists and geographical information database specialists can help waterbird managers identify and prioritize issues at the local scale of important waterbird sites. A suggested approach begins with an inventory of known or suspected pollutant sources in the airshed and watershed of interest. This is readily accomplished by examining existing databases and files maintained by state and federal natural resource management agencies. For example, the U.S. Environmental Protection Agency's *Envirofacts Database* and some state-level counterpart services allows site-specific queries of many individual databases related to active air and water waste discharge permits, active and abandoned solid or hazardous waste facilities, and hazardous waste generators, transporters, and disposers including the following:

National Pollutant Discharge Elimination System Sites (surface water discharges)
Air Facility System Sites (permitted discharges to air)
Toxics Release Inventory (chemical release data for certain industries)
National Priorities List (Superfund Sites)
CERCLIS Sites (known and suspected unregulated waste sites)
Inactive Hazardous Waste Sites
Old Landfills
Active Solid Waste Permits (landfills, incinerators, etc)
Resource Conservation and Recovery Act Sites (waste transport, storage, and disposal)

Sewage Sludge Land Application Sites

Registered Concentrated Animal Feeding

Underground Storage Tanks

When a database search is combined with a site reconnaissance of the important bird area and interviews with air, water, and waste regulators at the state level, an inventory of waste sources of concern can be generated. This can be the basis for a discussion with wildlife toxicologists on the need for any further actions.
In general, a lack of pollutant sources from this screening would indicate a low need for aggressive site characterization. Likewise, any follow-up work needed would be guided by specific issues from this inventory.

Follow-up work may include review of monitoring data for facilities identified by the inventory or collection of exposure data through new monitoring. Ecological risk assessment is a recommended method for assessing the threat of individual or combinations of chemical stressors to waterbirds (Rattner 2000), and technical assistance on pollution issues and risk assessment is available through several sources. The U.S. Fish and Wildlife Service typically has one or more Environmental Contaminants Specialists in each of its Ecological Services field offices (http://southeast.fws.gov/es/ndxeso.htm) in the southeastern U.S. Contaminants Specialists can provide assistance in risk assessment, monitoring, and planning. Academic institutions, particularly those with wildlife management programs and toxicology extension specialists, may have services available to help with local site evaluation. The U.S. Geological Survey’s Cooperative Fish and Wildlife Research Units (http://www.coopunits.org/About_CRU) provide technical assistance and consultation to parties who have interests in natural resource issues; they can be a liaison to others in their home universities with expertise on contaminant assessment. Technical assistance is also likely available though state natural resource management agencies.

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Table 2. Toxicity of some of the contaminants reviewed here.

Compound	Class[1]	Mallard Acute LD50 (mg/Kg)[2]	Toxicity Category[3]
aldicarb	CB	3.4	Extremely toxic
carbaryl	CB	>2,500	Slightly toxic
carbofuran	CB	0.40	Extremely toxic
chlorpyrifos	OP	76	Highly toxic
diazinon	OP	3.9	Extremely toxic
ethoprop	OP	13	Extremely toxic
famphur	OP	10	Extremely toxic
malathion	OP	1,485	Slightly toxic
temephos	OP	79	Highly toxic
aldrin	OC	520	Moderately toxic
chlordane	OC	1,200	Slightly toxic
DDT	OC	>2,200	Slightly toxic
Dieldrin	OC	381	Moderately toxic
Endrin	OC	33	Extremely toxic
Heptachlor	OC	>2,000	Slightly toxic
Lindane	OC	>2,000	Slightly toxic
Mirex	OC	>2,400	Slightly toxic
Toxaphene	OC	71	Highly toxic

1 CB = carbamate, OP = organophosphorus, OC = organochlorine

2 LD_{50}: Concentration, given in a single oral dose, that is estimated to be lethal to 50% of the test population. Units are mg of toxicant per kg body weight).

3 Relative rating for acute toxicity in avian feeding studies (from Smith 1987):

Extremely toxic ($LD_{50} \leq 40$ mg/kg body weight)
Highly toxic (LD_{50} 41-200 mg/kg body weight)
Moderately toxic (LD_{50} 201-1000 mg/kg body weight)
Slightly toxic (LD_{50} 1001-5000 mg/kg body weight)
Relatively nontoxic (LD_{50} > 5001 mg/kg body weight)

Beneficial Use of Dredged Material

Navigable waterways and channels in the southeastern United States are maintained at appropriate depths primarily through the process of dredging. This is primarily the responsibility of the US Army Corps of Engineers, State Ports, and/or Departments of Transportation. Waterbirds can benefit from dredging operations when dredged material is used to create or restore waterbird habitats. Coarse, clean dredged material (typically sand or sand/shell) can be used to create, restore, or maintain island nesting sites or nesting habitat on beaches, while material not suitable for upland disposal can be used to restore marsh.

One of the greatest benefits to waterbirds from dredging is the creation and maintenance of nesting habitats on islands. Islands created with dredged material can mimic their natural counterparts and provide excellent habitat for nesting waterbirds. They are often remote and lack mammalian predators, and they are typically only accessible by boat, which reduces, but does not eliminate, the potential for human disturbances. A key advantage of dredged material islands is that they are often higher in elevation than natural islands, which reduces the chances of flooding.

At the same time, there are potential disadvantages of dredged material islands. These islands require periodic deposits of sand to maintain their size and seral stage, if desired. This is especially true for sites with early succession habitat required by many tern species. Those constructed in open water where an island or emergent shoal did not previously exist can experience rapid erosion. The process of dredging and disposal of dredged material can cause localized increases in turbidity, re-suspend contaminants in sediments, degrade or eliminate submerged aquatic vegetation, and reduce intertidal habitats. Another potential disadvantage is that creating man-made islands could be viewed as mitigation for practices that destroy or degrade stable, natural habitats. This could result in the increased loss of natural habitats over time, especially early succession habitats, unless permanent protection, active management, and periodic renourishment are required. Furthermore, budgetary constraints and increased pressure to place sand on barrier beaches for beach widening and the protection of real estate-- the same sand that once went to remote islands for the benefit of birds-- could jeopardize the future of nesting sites that have historically supported significant populations of waterbirds.

Nevertheless, dredged material islands can and do provide excellent habitat for waterbirds. These man-made islands, together with natural islands and beach nesting sites are essential to waterbirds in the southeastern United States and deserve the utmost in active protection measures and attention from managers.

In planning for the creation or restoration of waterbird nesting sites with dredged material, one must consider the following: location, dike or not to dike, size, elevation, substrate, and the implementation of a long-term maintenance, management, and monitoring plan.

Location

The presence of mammalian predators or human disturbances will discourage or prevent many species of waterbirds from nesting, especially the colonial species. Islands located close to mainland or another potential mammalian predator source and those easily accessible to people are less suitable for nesting waterbirds. Therefore sites considered for creation or restoration should have a natural or man-made barrier to predators and people. The most effective barrier is open water with a deep channel or tidal flow. A large expanse of open water between mainland or beach and a nesting site will also discourage, but not prevent, visits by people and their pets. At least 2km of open water at mean low water, preferably with a deep channel and tidal flow, separating a potential nesting site from mainland or other predator source is sufficient to reduce the chance of both predators and people visiting the site.

Islands created in open water where no island or shoal previously existed can experience rapid erosion from tides and storms. This can reduce the useful life of the site (W. Golder, pers. obs.). If the source of sand to replenish the site is limited, reducing the chance of erosion is an important concern. Islands created or restored where islands previously existed are usually more stable and offer the best opportunities for creating or restoring nesting sites.

Waterbirds will likely colonize dredged material islands created or restored in areas with a recent history of nesting activity. Those in areas with no history of nesting activity may require many years before nesting waterbirds colonize the site.

Additionally, factors such as proximity to suitable foraging areas and the stability of foraging areas and prey base may affect the use of a site by nesting waterbirds.

Additional considerations should include proximity to a source of dredged material for future deposits of sand if future deposits of sand are desired; and proximity to aquaculture facilities, fish hatcheries, and sensitive fish populations as conflicts between potential prey and predatory waterbirds can result (USFWS 2005, Glahn 1999, Huner et al. 2002).

Dike vs. undiked islands

Several studies have compared waterbird use of diked and undiked dredged-material islands (Landin and Soots 1977, Soots and Landin 1978, Parnell et al. 1997, Parnell and Soots 1979, Soots and Parnell 1975b, Parnell et al. 1986). All have concluded that undiked islands are most suitable for nesting waterbirds. While diked islands will occasionally be used by waterbirds, most ground-nesting waterbird species will avoid nesting on fine substrate typically found in diked islands. Fine substrate and the enclosure of a site within a dike increase the chances of flooding. Furthermore, many species will usually avoid nesting within the dike itself.

There are certainly exceptions. Sites with small dikes or those filled to capacity with coarse "beach quality" sand may be used by nesting waterbirds as they more closely resemble undiked islands than typical diked islands. Waterbirds will sometimes use very large diked disposal areas (>100ha) with open water and patches of emergent marsh and/or woody vegetation suitable for nesting wading birds or marsh birds. Furthermore, diked islands can provide suitable foraging and loafing areas for waterbirds (Landin and Soots 1977).

Islands with out a dike resemble an inverted cone with one or more domes depending on how many times the outflow pipe was moved during disposal. On a typical undiked island, effluent exits the outflow pipe and is allowed to flow unobstructed to the water's edge, which typically results in an island with a gentle slope from dome to water. This is the type of island most preferred by nesting waterbirds (Landin and Soots 1977, Soots and Landin 1978, Parnell et al. 1997, Parnell and Soots 1979, Soots and Parnell 1975b, Parnell et al. 1986).

The Wilmington District of the USACOE has developed a disposal method that results in an island that has features of an undiked island and reduces the impact on surrounding habitats. When used, it can be very successful in creating or restoring waterbird nesting habitat and reducing impacts to surrounding submerged habitats. The method is called “control-of-effluent.”

This method of disposal is aptly named because the slurry of water and sand that exits the outflow pipe is channeled to the desired location via small, temporary berms. The berms are constructed prior to the initiation of dredging and usually surround most of the disposal area. A bulldozer or other earth shaping equipment is used to control the effluent and guide it to the desired area and away from sensitive habitats. The temporary berms are then graded to the desired slope when the pumping of dredged sand has been completed. “Control-of-effluent” has been (and remains) the standard method used by the Wilmington District for the deposition of dredged material on estuarine islands since the early 1970’s.

Slope

A dredged sand island is rarely a perfect, inverted cone-shaped feature. Most often it consists of a lower drift ridge and swale, an upper drift ridge and swale, a steeper slope leading to the dome, and the dome itself (see Figure 1 from Soots and Parnell 1975b). Soots and Parnell (1975b) defined slope as the rise in elevation from the upper swale to the dome. A gentle slope of 30:1 (a rise of 1 m over a linear distance of 30m) has been recommended for ground-nesting waterbirds (Soots and Landin 1978, Landin 1986, Chaney et al. 1978).

Ideally, one could place the exact amount of sand on a site to maintain an island’s size and slope that would be perfect for nesting waterbirds, and then maintain this size and slope throughout the life of the island. Rarely does this scenario work perfectly.

Most often and especially for restoration of early-succession habitat on an existing island, slope becomes a factor of the maximum allowable (permitted) size of an island or disposal area and the amount of dredged sand available for the site. Therefore flexibility is required to ensure that a site receives a new deposit of dredged sand when needed (if desired) and the site remains suitable for nesting waterbirds. Periodic replenishment with dredged sand is necessary to maintain early succession habitat required by most species of nesting terns and Black Skimmers.

To maintain suitable habitat for ground nesting waterbirds, gentle slopes of 30:1 need to be present on the site. As long as an area with a gentle slope and suitable substrate are present on the dome or at least one side of an island, the island will be suitable for ground nesting waterbirds. Islands with steeper slopes leading to an upper, flat or gently sloping terrace or dome can be suitable as long as the nesting area has the appropriate substrate. In such as case, based on observations of waterbirds nesting on North Carolina islands, the slope leading to the terrace should be no steeper than 10:1.

Substrate

Substrate comprised of at least 90% sand, often called "beach quality" sand, sand/shell, or sand/gravel is suitable for ground-nesting species and those that require early-succession habitats, such as terns and skimmers. Ground-nesting waterbirds tend to avoid nesting on fine grained substrate, such as that with a high percentage of silt or clay.

The coarse grain composition of substrate on sites where woody vegetation is desirable is less important as long as the site is stable. The stability of a site with fine-grained material can be increased by the deposition of coarse dredged material over the fine substrate (Landin 1986).

Island size, elevation, and shape

Island size and elevation are important considerations. Soots and Landin 1978 and Landin (1986) recommend that islands be no less than 2 ha and no more than 20 ha. Maintenance of bare, sparsely vegetated, or grassy habitats can be more difficult on large islands, especially where maintenance dredging is infrequent or the amount of dredged sand available for an island is limited. Islands with well-developed grassland or shrub thicket habitats may become attractive to predatory birds or mammals, which can discourage ground nesting waterbirds, like terns and skimmers, from nesting. For example, in North Carolina, the mean size of undiked dredged material islands used by nesting terns is 3.4 ha; the mean size of natural islands used by terns is 1.5 ha (NCWRC).

Elevation is also an important consideration (Soots and Landin 1978). Islands that are low can be susceptible to overwash or partial flooding during late spring or summer storms. Islands that are high in elevation may have slopes that are too steep for nesting terns and the higher elevation substrate may remain unsettled for a long period of time. Landin (1986) recommends one to three meters as ideal elevation for dredged material islands, and that higher elevations may be suitable if the dredged material is coarse sand. The mean elevation of dredged material islands used by terns in North Carolina is 3.4 m and 1.3 m for natural islands (NCWRC). The shape of a dredged material island is probably of little importance to nesting terns as long as the site has suitable conditions for nesting terns.

Shoreline stabilization

Shoreline stabilization is not recommended for islands that will be created or restored for nesting terns. Royal and Sandwich tern chicks usually form a crèche 2-3 d after hatching and prefer access to the water's edge (Shealer 1999, Buckley and Buckley 2002). Chicks of other tern species sometimes move to the water's edge prior to fledging (Parnell et al. 1995, D. Allen and W. Golder, pers. obs.). If an island is stabilized with sand bags or rip-rap, tern chicks may attempt to make their way to an intertidal beach during low tide and then be swept away during high tide or by large boat wakes. Tern chicks may tumble into crevices of a rip-rap stabilized shoreline.

Stabilization with submerged, emergent, or upland vegetation presents a different set of problems for nesting terns. Planting vegetation will likely increase the rate of plant succession on an island, thus reducing the useful life for nesting terns. Vegetation can attract nesting gulls, which can become significant predators on nesting terns and may cause terns to abandon an otherwise suitable nesting site. Stable vegetation may attract predatory and non-predatory mammals, which may be able to overwinter on an island.

Islands managed for the benefit of grass, shrub, or tree nesters, such as wading birds and pelicans, can benefit from shoreline stabilization. Shoreline stabilization can reduce the rate of erosion and potentially prolong the useful life of an island and in some cases may be essential to preventing the loss of habitat at historic nesting sites. However, careful consideration must be given to use of the site by nesting shorebirds, nesting sea turtles and diamond-backed terrapins (*Malaclemys terrapin*), use of shoreline and intertidal areas by breeding and non-breeding shorebirds or waterbirds, and the effect of stabilization on adjacent shorelines.

Lastly, the presence of submerged and emergent vegetation may jeopardize the ability to deposit new sand on a site, thus jeopardizing the maintenance of a site for nesting terns.

Management and Monitoring

Most dredged material islands require active management to be suitable for nesting waterbirds. While these islands are often remote and only accessible by boat, they can become popular areas for passive and active recreational activity, especially those located near population centers. These activities often peak during the warmer months of the year, which typically coincides with nesting activity by waterbirds. Therefore, dredged material islands require active management and regular monitoring to prevent or discourage human disturbances. With each dredged material island supporting or potentially suitable for nesting waterbirds, there should be a management, monitoring, and maintenance plan developed and implemented by an appropriate agency or non-governmental organization with demonstrated experience in waterbird management.

Succession and Useful Life of Habitat

Dredged material islands undergo a predictable pattern of plant succession, which largely determines the habitat available for nesting waterbirds and the suite of waterbird species that may use a particular island. Parnell and Soots (1975) mapped plant succession on undiked dredged material islands along the North Carolina coast (Figure 1).

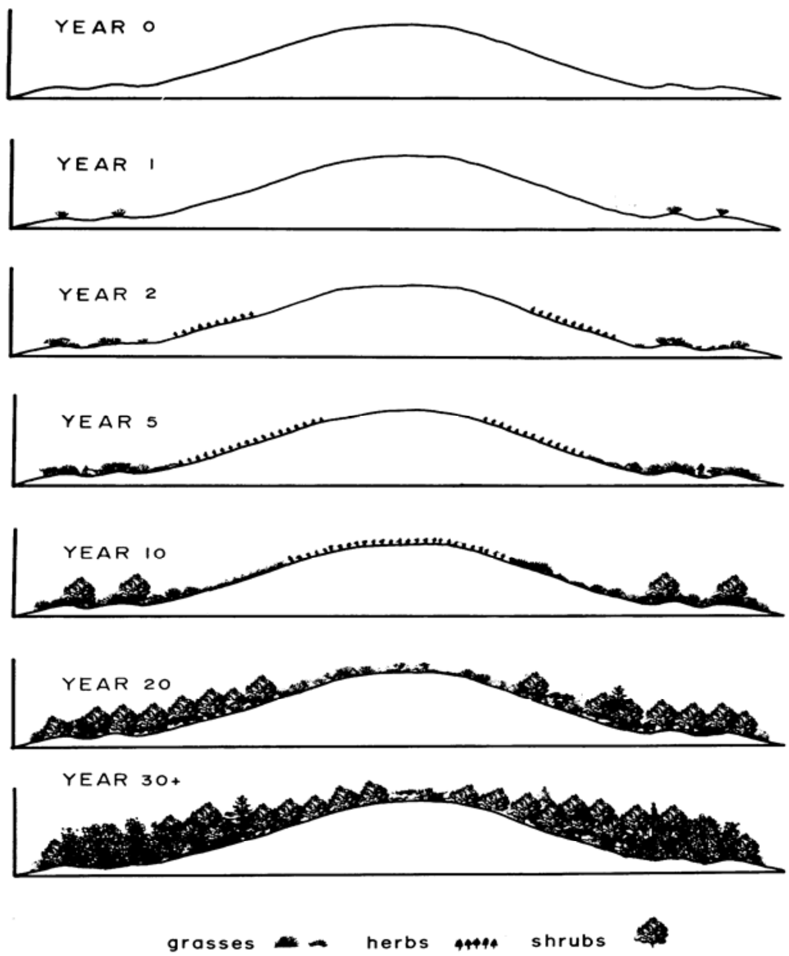

Figure 1. Plant succession on dredged-material islands in North Carolina (Soots and Parnell 1975).

The use of dredged material islands by nesting waterbirds follows a similar and predictable pattern. New deposits of dredged sand are typically occupied by nesting terns and skimmers, older islands become less suitable for early succession nesters and more suitable for pelicans and gulls, and islands with shrub thickets or forest habitats are most suitable for nesting wading birds (Soots and Parnell 1975). The useful "life" of an island can vary locally and regionally, and depends on many factors that can extend or shorten the period of time an island is used. These include substrate, disturbances, predators, local environmental conditions, use by roosting cormorants or pelicans, and history of nesting waterbird use. Table 3 provides general guidelines for use of dredged sand islands by nesting waterbirds (Soots and Parnell 1975).

Table 3. Estimated age at first use and duration of use of dredged material islands by nesting waterbirds in North Carolina.

II. Species	Age at first use (yrs)	Estimated Use (yrs)
Brown Pelican	5	10-15
Laughing Gull	5	10-15
Royal and Sandwich tern	1-2	4-7
Gull-billed Tern	2	4
Common Tern	2	6
Forster's Tern*	3	2+
Least Tern	1-2	4
Wading Birds	10	30+

* Highly variable. Depends on presence of wrack or marsh.

Note: Adapted from Soots and Parnell (1975) and revised based on additional information not available at the time of their publication.

Timing of disposal of dredged material is just as important as the quality of material being placed on potential nesting sites. Several factors influence timing of dredging projects. They include (but are not limited to): impact on local fisheries, presence of endangered species (sea turtles, manatees, and others), presence of nesting birds, local weather conditions, funding, contractor availability, and condition of the dredging site. Placing dredged material on potential nesting sites while birds are courting, incubating, feeding chicks, or anytime prior to all chicks fledging will cause abandonment of the site and would likely violate state and federal laws. Placing dredged material on sites while birds are actively nesting must be avoided. The dredging window (the period when excavation of material by dredging and the disposal of that material is permitted) varies throughout the region. Therefore, determination of the appropriate time for a dredging project must be handled locally. Ideally, placement of dredged material on a potential nesting site should be completed during fall or winter months (Soots and Landin 1978), or at least four weeks prior to the first arrival of nesting birds (W. Golder, pers. obs.). This will give the substrate time to settle and dry out prior to the arrival on nesting birds. It will also allow time for the site to be posted and other appropriate management measures to be implemented.

Opportunities for short-term and long-term waterbird habitat restoration with dredged material likely exist at many sites along the southeastern United States coastline, especially on state and federal lands, non-governmental conservation lands, and through partnerships with private landowners. Identifying opportunities for waterbird habitat restoration on dredged material islands should be a priority in all coastal states in the region. In some areas, existing managed habitats could be altered to provide specific habitats required by waterbirds. Existing dredged material islands that currently do not provide suitable nesting conditions for waterbirds should be reviewed for their potential as restoration sites. Similarly, opportunities for the creation of waterbird habitats should also be explored where appropriate. The use of dredged material is one method that can be used successfully to both create and restore nesting habitats for waterbirds.

Success of waterbird habitat projects that involve depends on cooperation among regulatory and resource agencies (state and federal), non-governmental organizations, and other stakeholders that is established long before a project is initiated. To facilitate this cooperation, some states and areas within states have developed working groups or committees that meet regularly to discuss dredging, birds, project design, and other issues related to birds and dredging. North Carolina, for example, has the North Carolina Colonial Waterbird Management Committee and representatives from resource agencies actively participate in USACOE District dredging coordination meetings. Tampa Bay has a Migratory Bird Protection Committee to discuss, among other things, issues related to dredging and birds.

Recommendations:

1. ***At least 2km of open water at mean low water, preferably with a deep channel and tidal flow, separating a potential nesting site from mainland or other predator source is sufficient to reduce the chance of both predators and people visiting the site.***
2. ***Construction of permanent dikes around sites created or restored for nesting waterbirds should be avoided. Undiked islands and those where control of effluent method of disposal is used are preferred.***

3. ***Disposal of dredged material on islands should be conducted outside of the nesting season and should be completed at least 4 weeks prior to the arrival of nesting birds.***
4. ***A gentle slope of 30:1 is desirable for ground-nesting waterbirds.***
5. ***A long-term management plan should be developed and implemented on all sites where dredged material is used to create or restore habitats for nesting waterbirds and the management plan should be implemented by an appropriate agency or organization with demonstrated experience in waterbird management.***

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Depredation Control

Since all colonial waterbirds, other than Cattle Egret, are fish-eating species, many of these species are in conflict with economic and other interests associated fisheries, both recreational and commercial. In addition, when colonies (including especially Cattle Egrets) form in residential areas and near airports, safety and health issues need to be considered. All together in the Southeast Region, colonially nesting waterbirds receive much attention from the standpoint of depredation authority under the Migratory Bird Treaty Act, and permits are issued to authorize lethal take of thousands of colonially nesting waterbirds annually. The potential impacts on populations from depredation permits are analyzed in here and based on these, populations of some species may be recommended to decrease a population size category (the third type of objective listed above in the **Population Objectives** section in the main text). The management recommendations for reducing conflicts with human interests, and reduction objectives for diminishing conflicts and ultimately reducing take under depredation permits, are also discussed below.

The U.S. Fish and Wildlife Service is the federal agency responsible for conserving and protecting national populations for present and future generations. The Service is responsible also for working with the U.S. Department of Agriculture Wildlife Services (USDA Wildlife Services) and State fish and wildlife agencies to devise safe and effective ways to reduce existing conflicts. The Service uses a "depredation permit" process that enables both conflicts and conflict resolution strategies to be identified and acted on after assessing the biological implications to the depredating species. The issuance of a depredation permit allows the permit holder to take action against nuisance birds by either killing or otherwise removing them, but only after the damage has been documented and certified by USDA Wildlife Services, with all reasonable non-lethal measures proven ineffective. The Federal regulations pertaining to the issuance of depredation permits, are found in the Code of Federal Regulations (50 CFR Subpart D Control of Depredating Birds).

Aquaculture and Fish-Eating Birds

Cultivation of farm-raised catfish and crawfish for public consumption, baitfish for anglers and commercial fishing operations, and tropical fish for the pet trade all have undergone tremendous expansion since the 1970s. This expansion is happening at the same time many fish-eating bird species are recovering from low population levels caused by habitat loss and widespread pesticide use prior to 1970. In some areas aquacultural activities provide an abundant food source for fish-eating birds. While some believe that the increase in populations of fish-eating birds is due solely to greater prey availability, the majority of fish-eating birds are simply returning to former breeding or wintering areas, while taking advantage of available food. Although there are some serious conflicts involving economic losses due to fish-eating birds, actions to reduce conflicts must be implemented with the understanding that the southeastern environment is important for supporting both aquaculture and fish-eating birds.

Presently, a Depredation Order for Double-Crested Cormorants at freshwater aquacultural facilities is in effect which allows lethal control without a depredation permit at private and State operated facilities. This Depredation Order covers all States in the Service's Southeast Region (as well as Texas, Oklahoma, and Minnesota) where USDA Wildlife Services has certified that non-lethal approaches alone are not effective in alleviating economic losses. Permits for lethal control of other fish-eating species may be issued, again based on certification from USDA Wildlife Services and the removal process being biologically sound. In addition, the Service has a Director's Order in effect allowing lethal control of cormorants without a permit that may be impacting resources at public fish hatcheries.

Recreational Fishing, Double-crested Cormorants, and other Fish-Eating Birds

Declines in some recreational fish populations in the Great Lakes and Northeastern U.S. have been suspected of being bird-caused. Similar suggested declines in managed reservoirs of the Southeast have gained national attention. Among fish-eating birds, Double-Crested Cormorants receive the most attention as a suspected culprit in the decline of recreational fisheries. A review of all relevant studies to date suggests that under rare circumstances large cormorant populations could impact some local fisheries.

This impact may be negative in some cases, where certain age classes for a sport fish may be reduced to the point of affecting overall recruitment. In other cases the effect may be positive when consumption of mostly overabundant forage fishes may reduce competition with the younger age classes of sport fish.

The status of recreational fish populations and increasing populations of fish-eating birds is at best complex, but there is little support for the suggestion that cormorants, or any other fish-eating species, are responsible for widespread declines in recreational fish populations. Nevertheless, local problems may exist and the Service supports appropriate studies to document actual conflicts between fish-eating birds and recreational fish populations, as well as other natural resources of interest, in order to take the most appropriate course of action to alleviate the conflict.

Double-crested Cormorant National Management Plan and Environmental Impact Statement

In addition to aquaculture and recreational fishing concerns, other possible impacts from cormorants may occur. Potential effects on threatened and endangered species, other migratory birds, vegetation, and other natural resources and socioeconomic factors has led the Service to develop a Public Resources Depredation Order which is now in effect for allowing lethal control of double-crested cormorants where documentation exists that suggest Public resources are being impacted by cormorant populations. Refer to the Service's migratory bird website for more details on this Order:

http://migratorybirds.fws.gov/issues/cormorant/cormorant.html .

Service Guidelines Regarding Issuance of Permits for Depredating Fish-Eating Birds in the Southeast Region

The Migratory Bird Treaty Act allows the Service to permit lethal control through removal of nests with chicks and eggs, or shooting of migratory birds, such as fish-eating species, to control depredation. Lethal control of depredating fish-eating birds may be authorized, but only after certification by USDA Wildlife Services that (1) a damage problem exists and (2) non-lethal measures have proven ineffective. In addition, the Service determines (1) that no threatened or endangered species are involved and (2) the population status of the depredating bird species is secure. The following Southeast regional guidelines are presented here to help determine under what conditions a depredation permit would be considered by the Service:

Aquaculture Facilities

To remove depredating double-crested cormorants at a freshwater aquacultural site, or private and public hatchery facilities, a permit is not required because they fall under either the Aquacultural or Public Resources Depredation Orders, or the Director's Order, as described above, covering all States in the Service's Southeast Region. For all other fish-eating bird species, private facilities may be issued a depredation permit if significant economic harm is documented by USDA Wildlife Services, and the removal process is biologically sound.

Public Waters

Permits may be issued to ensure survival and recovery of State and Federal threatened and endangered species when supported by an approved recovery plan and when all other management solutions have proven ineffective. Consideration also will be given to issuing permits to alleviate depredation or damage to for rare and declining plant communities and animal species of conservation concern, or other species such as recreational fishes. However, issuance of depredation permits only will be considered after the development of a comprehensive management plan (approved by an appropriate natural resource management agency) identifying fish-eating birds as a major limiting factor for managing sustainable populations.

Private Waters:

Permits may be issued if a commercial (fee-only) operation is being affected, which has confined fish in a way that maximizes fishing opportunities for patrons (may include homeowner associations). Permits also may be issued for significant property damage (for example, to physical structures) or when significant impacts to vegetation are evident at private lakes or in uplands where nesting colonies or roosts are located.

Fish-stocking Sites for Public and Private Waters

Permits may be issued to take depredating birds at the site of stocking if all other management solutions have proven to be ineffective, but requests for permits will not be considered for free-swimming fish beyond the site of stocking.

A white paper summarizing authorized and reported take under depredation permits is included below.

Summary of Authorized and Reported Take of Colonial Nesting Fish-eating Birds from 1990 to 2002 within the Southeast U.S.

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This paper represents a summary of authorized and reported take for colonial nesting birds to alleviate depredation conflicts among Southeastern States included within the Southeast Region (Region 4) of the U.S. Fish and Wildlife Service (FWS) from 1990 to 2002. State waterbird biologists were first queried as to their best estimate of nesting pairs for each species and these numbers were then multiplied by 3 to represent two adults and an average of one fledgling per pair each year. Numbers of birds authorized for take were compiled based upon requests provide to the FWS Migratory Bird Permits Office in Atlanta, GA from U.S.D.A. Wildlife Services' State Offices. Numbers of birds reported taken were based on reports from permittees submitted yearly to the FWS Migratory Bird permits Office. All permit summary data used for this report are available upon request from the senior author.

The purpose of this exercise was to determine the relative level of authorized and reported take that may impact breeding populations of any species in any State and to determine if there may be differences among states in the numbers of authorized or reported birds. A threshold percentage for suggesting a closer look at population impacts may be warranted for both authorized and reported birds was 5% of estimated State breeding population (again, number of breeding pairs multiplied by 3). This threshold if reached or surpassed consistently from one year to the next does not imply that viability of a population is in question, but only should be interpreted that a closer look at the effects of depredation control on populations may be warranted. For those species where less than 5% of a breeding population is authorized or reported taken consistently from one year to the next, we are assuming there is no impact to that population.

Several caveats should be kept in mind when reviewing this summary. These are (1) low reliability on exact estimates from most states, but estimates are all considered close to actual population sizes based on expert opinions, (2) many birds are subject to being taken during the winter when populations of some species breeding to the north of the Southeast Region may inflate state breeding populations to an unknown extent, and (3) we assume the number of birds reported taken are correct (they may not be). With these caveats in mind:

For Alabama: Snowy Egrets in three years authorized take exceeded 5%, but reported take equaled 5% of estimated breeding population for only 1 year.

For Kentucky: Great Egrets authorized take equaled 5% for one year, but there has been no reported take for any year.

For Mississippi: Snowy Egrets from 1990-1998, authorized take exceeded 5% each year, but dropped below 5% since 1999; reported take for 3 years was 1/3 to 1/2 of estimated breeding population, but has dropped to near zero since 1999.

For Mississippi: Great Egrets from 1995-2002, authorized take exceeded 5% each year, but reported take never exceeded 5%.

For Mississippi: Great Blue Heron from 1995-2002, authorized take exceeded 5% each year, but reported take exceeded 5% in only two years and not since 2002.

For Tennessee: Great Egrets for two years, both authorized and reported take equaled 5%, but both have been at zero since 1994.

For all species in the States treated above, the data suggest that there is no long term effect from issuing depredation permits and there is not a need for further analysis, except to continue checking for changes to the above patterns at the end of each reporting year.

For Arkansas, a high percentage of species were found with authorized and reported take exceeding 5% of the State's estimated breeding population and so is treated separately here.

Snowy Egret: An average of 31% of the estimated number of Snowy Egrets are authorized each year (range 12-61%). An average of 16% are reported taken (range1-33%), but this number has dropped below 5% since 1998.

Great Egret: An average of 10% are authorized each year (range 8-46%) with an increasing trend since 1998. An average of 21% are reported taken (range 4-21%), with an overall increasing trend since 1990.

Great Blue Heron: An average of 15% are authorized (range 8-28%) with an increasing trend since 1990. An average of 15% are reported taken (range 5-15%) also with an increasing trend since 1990.

Anhinga: Authorized take for two years ranged to 19% of an estimated 300 individuals thought to occur in the State. Actual take in both years was 7%, but no activity since 1991 involving this species.

Little Blue Heron: An average of 24% are authorized (range 14-42%) with an increasing trend since 1990. An average of 9% are reported taken (5-12%) with a irregular pattern since 1990.

Tricolored Heron: Take for this species was authorized in 2002 at 152% of the estimated population, but none have been reported taken.

Of the species involved above, only the **Little Blue Heron** has been identified as a Bird of Conservation Concern (FWS 2002), on the American Bird Conservancy's Greenlist, (Chipley et al. 2002), and of Continental Concern in the Southeast U.S. Waterbird Conservation Plan (Hunter, Golder, Melvin, and Wheeler, in prep.), in large part because this species is the only species treated here that is undergoing steep declines through much of the Southeast, including in Arkansas. It may be prudent to more closely scrutinize permit requests that involve this species.

In addition, most migrant **American White Pelicans** authorized (~1600-2700, from 2000-2002) and reported (~550-750) taken from the Southeast are from Arkansas. Given an estimated global population of 180,000 total individuals this equates to 2% of the global population authorized and up to 0.5% reported taken during each of the last 3 years in Arkansas alone.

For Arkansas, it is apparent that there are major differences when compared to other States in numbers of birds authorized and reported taken. Are these differences due to differing levels of conflict or in differences in how conflicts are perceived between Arkansas and the other southeastern States. A closer look as to what is happening in Arkansas appears warranted. Much of the reported reasons for depredation permits involve aquaculture, but also some health and safety associated issues involve nesting colonies in developed areas, etc.

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II. Appendix 2 – Scoring Tables

Scores and Status for the Southeast U.S. Waterbird Conservation Region
Breeding Colonial Waterbirds (rev. 4/20/06)

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Masked Booby	**4**	**4**	**4**	**3**	**3**	**2**	**20**			**15 CC c**					
Southeast U.S. Region	**2**		**4**	**3**				**1**			**IV**	**PR**	**100us-can (<1 gl)**	**2**	**2**
PENFL (BCR 31)	**2**		**4**	**3**				**1**			**IV**	**PR**	**100 reg.**	**2**	**2**
STFL	*2*		*4*	*3*				*1*			*IV*	*PR*	*(100)*		
American White Pelican	**2**	**4**	**3**	**3**	3	**2**	**17**								
Southeast U.S. Region	**2**		**3**	**3**				**1**			**IV**	**PR**	**<1us-can (<1 gl)**	**4a**	**5b**
GCP (BCR 37)	**2**		**3**	**3**				**1**			**IV**	**PR**	**100 reg.**	**4a**	
CTX	*2*		*3*	*3*				1			*IV*	*PR*	*100 (TX)*		
Tam.	*3*		*3*	*3*				*1*			*IV*	*PR*	*(100 Mex)*		
Brown Pelican	**1**	**4**	**3**	**2**	**3**	**3**	**16**								
Southeast U.S. Region	**1**		**3**	**2**				**5**	**21**	**16 S**	**II**	**PR**	**>90us-can (44 gl)**	**8a**	**9b**
SECP (BCR 27)	**1**		**3**	**2**				**5**	**21**	**16 S**	**III a**	**PR**	**34 reg. (15 gl)**	**8b**	
SACP	*1*		*3*	*2*				*5*	*21*	*16 S*	*II*	*PR*	*(23) (10 gl)*		
EGCP	*2*		*3*	*2*				*3*	*20*		*III a*		*(11) (5 gl)*		
PENFL (BCR 31)	**4**		**4**	**2**				**5**	**25**	**20 RC, S**	**I**	**MA**	**22 reg. (10 gl)**	**7a**	
CENFL	*4*		*4*	*2*				*5*	*25*	*20 RC, S*	*I*	*MA*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
STFL	*4*		*4*	*2*				*5*	*20*	*20 RC, S*	*I*	*MA*			
GCP (BCR 37)	**1**		**3**	**2**				**5**	**21**	**16 S**	**II**	**PR**	**43 reg. (19 gl)**	**8b**	
LA	*1*		*3*	*2*				*5*	21	*16 S*	*II*	*PR*	*(35 LA) (15 gl)*		
UTX	*1*		*3*	*2*				*3*	*19*		*III a*	*PR*	*(8 TX) (4 gl)*		
CTX	*1*		*3*	*2*				*3*	*19*		*III a*	*PR*			
Neotropic Cormorant	**2**	**2**	**3**	**2**	**1**	**1**	**11**								
Southeast U.S. Region	**1**		**3**	**3**				**3**	**14**		**IV**	**PR**	**>95us-can (<2 gl)**	**7**	**7**
EP (BCR 20)	**2**		**3**	**2**				**1**					?		
OP (BCR 21)	**2**		**3**	**2**				**2**	**13**				**21 reg.**	**6b**	
WGCP (BCR 25)	**2**		**3**	**2**				**1**					**8 reg.**	**5**	
MAV (BCR 26)	**2**		**3**	**2**				**1**					**<1 reg.**	**2**	
TAMB (BCR 36)	**2**		**3**	**2**				**2**	**13**				**6 reg.**	**4a**	
GCP (BCR 37)	**1**		**3**	**3**				**5**	**17**		**IV**	**PR**	**64 reg. (1 gl)**	**6**	
LA	*1*		*3*	*3*				*5*	*17*		*IV*	*PR*	*(36 LA)*		
UTX	*1*		*3*	*3*				*3*	*15*				*(28 TX)*		
CTX	*1*		*3*	*2*				*3*	*14*						
STX/Tam.	*2*		*2*	*1*				*3*	*10*						
Double-crested Cormorant	**1**	**3**	**2**	**2**	**2**	**2**	**12**								
Southeast U.S. Region	**1**		**2**	**2**				**2**	**14**		**IV**	**PR**	**6 us-can (6 gl)**	**8b**	**8b**
OP (BCR 21)	**1**		**2**	**2**				**1**					**<1 reg.**	**2**	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
WGCP (BCR 25)	1		3	2				1			IV	PR	4 reg.	4a	
MAV (BCR 26)	1		3	2				1			III b	PR	<1 reg.	3	
SECP (BCR 27)	2		2	2				2	15		III b	PR	20 reg.	6	
SACP	*2*		*2*	*2*				*2*	*15*				*(19)*		
EGCP	*3*		*2*	*2*				*2*	*16*		*III b*	*PR*	*(1)*		
PIED (BCR 29)	1		2	2				1					<1 reg.	2a	
PENFL (BCR 31)	3		3	2				5	20	16 S	II	PR	75 reg. (5 gl)	7	
CENFL	*3*		*3*	*2*				*5*	*20*	*I6 S*	*II*	*PR*			
STFL	*4*		*3*	*2*				*5*	*21*	*17 RC*	*I*	*MA*			
GCP (BCR 37)	3		2	2				2	16				1 reg.	4	
LA	*2*		*2*	*2*				*2*	*15*						
UTX	*3*		*2*	*2*				*2*	*16*						
CTX	*3*		*2*	*2*				*2*	*16*						
Anhinga	3	3	3	3	1	1	14								
Southeast U.S. Region	2		3	3				4	17		IV	PR	100 us-can (5 gl)	8b	8
OP (BCR 21)	3		3	3				2	16				1 reg.	4b	
WGCP (BCR 25)	4		3	3				2	17		IV	PR	5 reg.	4a	
MAV (BCR 26)	3		3	3				3	17		IV	PR	10 reg. (1 gl)	6b	
SECP (BCR 27)	3		3	3				3	17		III b	PR	44 reg. (2 gl)	6a	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SACP	*2*		*3*	*3*				*3*	*16*		*IV*	*PR*	*(41)*		
EGCP	*3*		*3*	*3*				*3*	*17*		***III b***	PR	*(3)*		
APPS (BCR 28)	**3**		**3**	**3**				**1**					**<1 reg.**	**2b**	
PIED (BCR 29)	**3**		**3**	**3**				**1**			**IV**	**PR**			
PENFL (BCR 31)	**4**		**3**	**3**				**5**	**20**	**16 RC, s**	**I**	**MA**	**37 reg. (2 gl)**	**6**	
CENFL	*1*		*3*	*3*				*5*	*17*						
STFL	*4*		*4*	*3*				*5*	*21*	*17 RC*	*I*	*MA*			
TAMB (BCR 36)	**3**		**3**	**3**				**1**					**<1 reg.**	**2a**	
GCP (BCR 37)	**4**		**3**	**3**				**3**	**18**	**14 RC**	**I**	**MA**	**3 reg. (<1 gl)**	**4a**	
LA	*2*		*3*	*3*				*3*	*15*		*IV*	*PR*	*(1 LA)*		
UTX	*4*		*3*	*3*				*3*	*18*	*14 RC*	*I*	*MA*	*(2 TX)*		
CTX	*4*		*3*	*3*				*3*	*18*	*14 RC*	*IV*	*MA*			
STX/Tam.	*4*		*4*	*4*				*3*	*15*		*IV*	*PR*			
Magnificent Frigatebird	**4**	**4**	**4**	**3**	**4**	**3**	**22**			**16 CC c**					
Southeast U.S. Region	**5**		**5**	**3**				**2**	**26**	**20 RC**	**I**	**IM (CR)**	**100 us-can (<1 gl)**	**3**	**4**
PENFL (BCR 31)	**5**		**5**	**3**				**2**	**26**	**20 RC, s**	**I**	**IM (CR)**	**100 reg. (<1 gl)**	**3**	
STFL	*5*		*5*	*3*				*2*	*26*	*20 RC*	*I*	*IM (CR)*	*(100)*		
Great Blue Heron	**1**	**3**	**2**	**2**	**1**	**1**	**10**								
Southeast U.S. Region	**1**		**2**	**2**				**4**	**14**		**IV**	**PR**	**25 us-can (20 gl)**	**9**	**9**
EP (BCR 20)	**2**		**2**	**2**				**1**			**IV**	**PR**	**<1 reg.**	**4b**	

Species **Region, BCR, Subarea**	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
OP (BCR 21)	**1**		**2**	**2**				**4**	**14**		**IV**	**PR**	**6 reg. (1 gl)**	**6a**	
WGCP (BCR 25)	**1**		**2**	**3**				**4**	**15**		**IV**	**PCL**	**15 reg. (3 gl)**	**8b**	
MAV (BCR 26)	**1**		**2**	**3**				**5**	**16**		**III b**	**PCL**	**20 reg. (4 gl)**	**8b**	
SECP (BCR 27)	**1**		**2**	**2**				**4**	**14**		**III b**	**PR**	**39 reg. (8 gl)**	**8**	
SACP	*2*		*2*	*2*				*4*	*15*		*IV*	*PR*	*(26) (5 gl)*		
EGCP	*1*		*2*	*2*				*4*	*14*		*III b*	*PR*	*(13) (3 gl)*		
APPS (BCR 28)	**1**		**3**	**2**				**3**	**14**		**III b**	**PR**	**5 reg. (1 gl)**	**6**	
PIED (BCR 29)	**1**		**3**	**2**				**3**	**14**		**IV**	**PR**	**3 reg. (1 gl)**	**6**	
PENFL (BCR 31)	**4**		**3**	**2**				**5**	**19**	**16 RC**	**I**	**MA**	**5 reg. (1 gl)**	**6**	
CENFL	*4*		*3*	*2*				*5*	*19*	*16 RC*	*I*	*MA*			
STFL	*3*		*3*	*2*				*5*	*18*		*IV*	*PR*			
TAMB (BCR 36)	**3**		**2**	**2**				**2**	**14**				**<1 reg.**	**3a**	
GCP (BCR 37)	**3**		**3**	**2**				**5**	**18**		**IV**	**PR**	**7 reg. (1 gl)**	**6a**	
LA	*2*		*2*	*2*				*5*	*16*		*IV*	*PR*	*(4 LA)*		
UTX	*2*		*2*	*2*				*4*	*15*		*IV*	*PR*	*(3 TX)*		
CTX	*4*		*4*	*2*				*4*	*19*	*16 RC*	*I*	*MA*			
STX/Tam.	*4*		*3*	*2*				*3*	*17*		*IV*	*PR*			
Great White Heron (treated as a biological species here)	**5**	**5**	**5**	**4**	**5**	**5**	**29**			**20 CC a**			**>90 global**		
Southeast U.S. Region	**5**	**5**	**5**	**4**	**5**	**5**		**5**	**34**	**25 RC, S**	**I**	**CR**	**100 us-can (90 gl)**	**6b**	**6**

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PENFL (BCR 31)	**5**		**5**	**4**				**5**	**34**	**25 RC, S**	**I**	**CR**	**100 reg. (90 gl)**	**6b**	
STFL	*5*		*5*	*4*				*5*	*34*	*25 RC, S*	*I*	*CR*	*(100) (90 gl)*		
Great Egret	**1**	**3**	**2**	**2**	**1**	**1**	**10**								
Southeast U.S. Region	**3**		**2**	**2**				**5**	**16**	**14 S**	**IV**	**PR**	**>90 us-can (20 gl)**	**10b**	**10**
OP (BCR 21)	**3**		**2**	**2**				**2**	**14**		**IV**	**PR**	**7 reg. (1 gl)**	**7**	
WGCP (BCR 25)	**2**		**2**	**2**				**3**	**14**		**IV**	**PCL**	**12 reg. (2 gl)**	**8b**	
MAV (BCR 26)	**2**		**2**	**3**				**5**	**17**		**III b**	**PCL**	**21 reg. (4 gl)**	**8**	
SECP (BCR 27)	**2**		**2**	**2**				**3**	**14**		**III b**	**PR**	**24 reg. (5 gl)**	**8**	
SACP	*3*		*2*	*2*				*3*	*15*		*IV*	*PR*	*(19) (4 gl)*		
EGCP	*1*		*2*	*2*				*3*	*13*		*IV*	*PR*	*(5) (1 gl)*		
APPS (BCR 28)	**2**		**3**	**2**				**1**			**IV**	**PR**	**<1 reg.**	**5**	
PIED (BCR 29)	**3**		**3**	**2**				**1**			**IV**	**PR**	**<1 reg.**	**4**	
PENFL (BCR 31)	**4**		**3**	**2**				**4**	**18**	**15 RC**	**I**	**MA**	**14 reg. (3 gl)**	**8b**	
CENFL	*4*		*3*	*2*				*4*	*18*	*15 RC*	*I*	*MA*			
STFL	*5*		*3*	*2*				*5*	*20*	*17 RC*	*I*	*MA*			
TAMB (BCR 36)	**3**		**2**	**2**				2	**14**				**<1 reg.**	**4b**	
GCP (BCR 37)	**4**		**3**	**2**				**5**	**19**	**16 RC**	**I**	**MA**	**22 reg. (4 gl)**	**8**	
LA	*1*		*2*	*2*				*5*	*15*		*IV*	*PR*	*(16 LA) (3 gl)*		
UTX	*4*		*3*	*2*				*4*	*18*	*15 RC*	*I*	*MA*	*(6 TX) (1 gl)*		
CTX	*4*		*3*	*2*				*4*	*18*	*15 RC*	*I*	*MA*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
STX/Tam.	*5*		*4*	*4*				*3*	*21*	*16 RC*	*I*	*MA*			
Snowy Egret	**1**	**3**	**3**	**2**	**1**	**1**	**11**								
Southeast U.S. Region	**1**		**3**	**2**				**5**	**16**		**IV**	**PR**	**>50 us-can (12 gl)**	**8a**	**9b**
OP (BCR 21)	**2**		**3**	**2**				**2**	**14**		**IV**	**PR**	**9 reg. (1 gl)**	**6**	
WGCP (BCR 25)	**3**		**3**	**2**				**2**	**15**		**IV**	**PCL**	**7 reg. (1 gl)**	**6**	
MAV (BCR 26)	**1**		**3**	**3**				**3**	**15**		**III b**	**PCL**	**24 reg. (2 gl)**	**8b**	
SECP (BCR 27)	**4**		**3**	**2**				**3**	**17**	**14 RC**	**I**	**MA**	**15 reg. (2 gl)**	**7b**	
SACP	*4*		*3*	*2*				*3*	*17*	*14 RC*	*I*	*MA*	*(13) (2 gl)*		
EGCP	*3*		*3*	*2*				*3*	*16*		*IV*	*PR*	*(2)*		
PIED (BCR 29)	**3**		**3**	**2**				**1**			**IV**	**PR**	**<1 reg.**	**3a**	
PENFL (BCR 31)	**2**		**3**	**2**				**5**	**17**		**III b**	**PR**	**8 reg. (1 gl)**	**6**	
CENFL	*2*		*3*	*2*				*5*	*17*		*III b*	*PR*			
STFL	*3*		*4*	*2*				*5*	*19*	*16 RC*	*I*	*MA*			
TAMB (BCR 36)	**3**		**3**	**2**				**2**	**15**				**<1 reg.**	**2**	
GCP (BCR 37)	**1**		**3**	**2**				**5**	**16**		**IV**	**PR**	**37 reg. (4 gl)**	**8b**	
LA	*1*		*3*	*2*				*5*	*16*		*IV*	*PR*	*(20 LA) (2 gl)*		
UTX	*1*		*3*	*2*				*3*	*14*		*IV*	*PR*	*(17 TX) (2 gl)*		
CTX	*1*		*3*	*2*				*4*	*15*		*IV*	*PR*			
STX/Tam.	*4*		*4*	*3*				*5*	*21*	*16 RC*	*I*	*MA*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Little Blue Heron	**5**	**3**	**4**	**3**	**1**	**1**	**17**			**13/5 CC b**					
Southeast U.S. Region	**5**		**4**	**3**				**5**	**22**	**18 RC, S**	**I**	**IM**	**>90 us-can (20 gl)**	**9b**	**9**
OP (BCR 21)	**5**		**4**	**3**				**3**	**20**	**16 RC**	**I**	**IM**	**11 reg. (2 gl)**	**7**	
WGCP (BCR 25)	**5**		**4**	**3**				**3**	**20**	**16 RC**	**I**	**IM/PCL**	**18 reg. (4 gl)**	**8b**	
MAV (BCR 26)	**4**		**4**	**3**				**4**	**20**	**16 RC**	**I**	**MA/PCL**	**30 reg. (6 gl)**	**8b**	
SECP (BCR 27)	**4**		**4**	**3**				**3**	**19**	**15 RC**	**I**	**MA**	**12 reg. (2 gl)**	**7**	
SACP	*3*		*4*	*3*				*3*	*18*	**14 RC**	*I*	*MA*	*(8) (2 gl)*		
EGCP	*5*		*4*	*3*				*3*	*20*	**16 RC**	*I*	*MA*	*(4) (<1gl)*		
APPS (BCR 28)	**3**		**4**	**3**				**1**			**IV**	**PR**	**<1 reg.**	**4**	
PIED (BCR 29)	**3**		**4**	**3**				**1**			**IV**	**PR**	**<1 reg.**	**4**	
PENFL (BCR 31)	**4**		**4**	**3**				**3**	**19**	**15 RC**	**I**	**MA**	**7 reg. (1 gl)**	**6**	
CENFL	*3*		*4*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
STFL	*5*		*4*	*3*				*3*	*20*	*16 RC*	*I*	*IM*			
TAMB (BCR 36)	**3**		**4**	**3**				**2**	**17**		**IV**	**PR**	**<1 reg.**	**2**	
GCP (BCR 37)	**2**		**3**	**3**				**5**	**18**	**14 S**	**I**	**PR**	**22 reg. (5 gl)**	**8b**	
LA	*2*		*3*	*3*				*5*	*18*	*14*	*I*	*PR*	*(13 LA) (3 gl)*		
UTX	*2*		*3*	*3*				*5*	*18*	*14*	*I*	*PR*	*(9 TX) (2 gl)*		
CTX	*2*		*3*	*3*				*5*	*18*	*14*	*I*	*PR*			
STX/Tam.	*4*		*4*	*3*				*5*	*21*	*17 RC*	*I*	*MA*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Tricolored Heron	2	4	3	2	3	2	16								
Southeast U.S. Region	2		3	2				5	21	17 S	II	PR	>90 us-can (33 gl)	8	8a
OP (BCR 21)	3		3	2				1					<1 reg.	2	
WGCP (BCR 25)	3		3	2				1					<1 reg.	4b	
MAV (BCR 26)	3		3	2				3	20	16	IV	PR	18 reg. (6 gl)	7	
SECP (BCR 27)	4		4	2				3	22	18 RC	I	MA	18 reg. (6 gl)	7	
SACP	4		4	2				4	23	19 RC	I	MA	(14) (5 gl)		
EGCP	4		4	2				3	22	18 RC	I	MA	(4) (1 gl)		
PENFL (BCR 31)	4		4	2				5	24	20 RC	I	MA	5 reg. (2 gl)	6b	
CENFL	4		4	2				5	24	20 RC	I	MA			
STFL	3		4	2				5	23	19 RC	I	MA			
TAMB (BCR 36)	3		3	2				2	19				<1 reg.	2	
GCP (BCR 37)	1		2	2				5	19	15 S	II	PR	59 reg. (19 gl)	8	
LA	1		2	2				5	19	15 S	II	PR	(44 LA) (14 gl)		
UTX	2		2	2				4	19	15 S	II	PR	(15 TX) (5 gl)		
CTX	2		2	2				4	19	15 S	II	PR			
STX/Tam.	4		4	3				5	25	20 RC	II	PR			
Reddish Egret	5	5	4	3	4	4	25			18 CC c					
Southeast U.S. Region	5		4	3				4	28	22 RC, S	I	IM	100 us-can (25 gl)	6b	6a

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SECP (BCR 27)	**3**		**5**	**3**				**1**			**IV**	**PR**	**<1**	**1**	
EGCP	*3*		*5*	*3*				*1*			*IV*	*PR*	*(<1)*		
PENFL (BCR 31)	**5**		**4**	**3**				**5**	**30**	**23 RC, S**	**I**	**IM**	**31 reg. (8 gl)**	**4**	
CENFL	*5*		*4*	*3*				*3*	*28*	*21 RC*	*I*	*IM*			
STFL	*5*		*5*	*3*				*5*	*31*	*24 RC*	*I*	*CR*			
GCP (BCR 37)	**5**		**4**	**3**				**5**	**30**	**23 RC, S**	**I**	**IM**	**69 reg. (17 gl)**	**5a**	
LA	*4*		*4*	*3*				*3*	*27*	*20 RC*	*I*	*MA*	*(3 LA) (1 gl)*		
UTX	*5*		*4*	*3*				*4*	*29*	*22 RC, S*	*I*	*IM*	*(66 TX) (16 gl)*		
CTX	*5*		*4*	*3*				*5*	*30*	*23 RC, S*	*I*	*IM*			
STX/Tam.	*5*		*4*	*4*				*5*	*31*	*23 RC, S*	*I*	*IM*			
Cattle Egret	**2**	**2**	**1**	**1**	**1**	**1**	**8**								
Southeast U.S. Region	**2**		**1**	**1**				**5**	**13**		**IV**	**PC**	**>80 us-can (10 gl)**	**10**	**10b**
OP (BCR 21)	**3**		**1**	**1**				**4**	**13**		**IV**	**PC**	**24 reg. (2 gl)**	**9**	
WGCP (BCR 25)	**1**		**1**	**1**				**3**	**10**		**IV**	**PC**	**22 reg. (2 gl)**	**9**	
MAV (BCR 26)	**2**		**1**	**1**				**3**	**11**		**IV**	**PC**	**10 reg. (1 gl)**	**8**	
SECP (BCR 27)	**3**		**1**	**1**				**3**	**12**		**IV**	**PC**	**17 reg. (2 gl)**	**9b**	
SACP	*3*		*1*	*1*				*3*	*12*		*IV*	*PC*	*(13) (1 gl)*		
EGCP	*1*		*1*	*1*				*3*	*10*		*IV*	*PC*	*(4)*		
APPS (BCR 28)	**1**		**1**	**1**				**1**					**<1 reg.**	**5**	
PIED (BCR 29)	**3**		**1**	**1**				**1**					**<1 reg.**	**6b**	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PENFL (BCR 31)	**4**		**1**	**1**				**5**	**15**		**IV**	**PC**	**9 reg. (1 gl)**	**8**	
CENFL	*4*		*1*	*1*				*5*	*15*		*IV*	*PC*			
STFL	*5*		*1*	*1*				*5*	*16*		*IV*	*PC*			
TAMB (BCR 36)	**1**		**1**	**1**				**2**	**9**		**IV**	**PC**	**1 reg.**	**6b**	
GCP (BCR 37)	**3**		**1**	**1**				**5**	**14**		**IV**	**PC**	**18 reg. (2 gl)**	**9**	
LA	*1*		*1*	*1*				*5*	*12*		*IV*	*PC*	*(4 LA)*		
UTX	*2*		*1*	*1*				*5*	*13*		*IV*	*PC*	*(14 TX) (1 gl)*		
CTX	*4*		*1*	*1*				*5*	*15*		*IV*	*PC*			
STX/Tam.	*1*		*1*	*1*				*5*	*12*						
Green Heron	**4**	**3**	**3**	**3**	**1**	**1**	**15**								
Southeast U.S. Region	**4**		**3**	**3**				**5**	**20**	**16 RC, S**	**I**	**MA**	**>60 us-can (40 gl)**		
EP (BCR 20)	**2**		**3**	**3**				**2**	**15**		**IV**	**PR**			
OP (BCR 21)	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**	**9 reg. (4 gl)**		
WGCP (BCR 25)	**3**		**3**	**3**				**4**	**18**		**IV**	**PR**	**13 reg. (5 gl)**		
MAV (BCR 26)	**2**		**3**	**3**				**4**	**17**		**IV**	**PR**	**9 reg. (4 gl)**		
SECP (BCR 27)	**4**		**3**	**3**				**3**	**19**	**14 RC**	**I**	**MA**	**24 reg. (10 gl)**		
SACP	*4*		*3*	*3*				*4*	*19*	*15 RC*	*I*	*MA*			
EGCP	*4*		*3*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
APPS (BCR 28)	**4**		**3**	**3**				**2**	**17**		**IV**	**PR**	**8 reg. (3 gl)**		

Species **Region, BCR, Subarea**	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
PIED (BCR 29)	**2**		**3**	**3**				**3**	**16**		**IV**	**PR**	**6 reg. (2 gl)**		
PENFL (BCR 31)	**4**		**3**	**3**				**5**	**20**	**16 RC, S**	**I**	**MA**	**12 reg. (5 gl)**		
CENFL	*4*		*3*	*3*				*5*	*20*	*16 RC*	*I*	*MA*			
STFL	*5*		*3*	*3*				*5*	*21*	*17 RC*	*I*	*MA*			
TAMB (BCR 36)	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**	**4 reg. (2 gl)**		
GCP (BCR 37)	**1**		**3**	**3**				**5**	**17**		**IV**	**PR**	**15 reg. (6 gl)**		
LA	*1*		*3*	*3*				*5*	*17*		*IV*	*PR*			
UTX	*1*		*3*	*3*				*5*	*17*		*IV*	*PR*			
CTX	*3*		*3*	*3*				*4*	*18*		*IV*	*PR*			
STX/Tam.	*4*		*3*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
Black-crowned Night-Heron	**3**	**3**	**3**	**2**	**1**	**1**	**13**								
Southeast U.S. Region	**5**		**3**	**2**				**4**	**19**	**16 RC**	**I**	**MA**	**<15 us-can (1 gl)**		
OP (BCR 21)	**3**		**3**	**2**				**2**	**15**				**4 reg.**		
WGCP (BCR 25)	**3**		**3**	**2**				**2**	**15**		**IV**	**PR**	**9 reg.**		
MAV (BCR 26)	**2**		**3**	**3**				**4**	**17**		**III b**	**PR**	**14 reg.**		
SECP (BCR 27)	**5**		**3**	**2**				**3**	**18**	**15 RC**	**I**	**MA**	**18 reg.**		
SACP	*5*		*3*	*2*				*3*	*18*	*15 RC*	*I*	*MA*			
EGCP	*5*		*3*	*2*				*3*	*18*	*15 RC*	*I*	*MA*			
APPS (BCR 28)	**2**		**3**	**2**				**2**	**14**		**III b**	**PR**	**4 reg.**		
PIED (BCR 29)	**3**		**3**	**2**				**2**	**15**		**IV**	**PR**	**4 reg.**		

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PENFL (BCR 31)	**2**		**3**	**2**				**3**	**15**		**IV**	**PR**	**14 reg.**		
CENFL	*2*		*3*	*2*				*3*	*15*		*IV*	*PR*			
STFL	*4*		*4*	*2*				*4*	*19*	16 RC	*I*	*MA*			
TAMB (BCR 36)	**3**		**3**	**2**				**2**	**15**				**9 reg.**		
GCP (BCR 37)	**2**		**3**	**2**				**5**	**17**		**IV**	**PR**	**23 reg.**		
LA	*1*		*3*	*2*				*5*	*16*		*IV*	*PR*			
UTX	*1*		*3*	*2*				*5*	*16*		*IV*	*PR*			
CTX	*4*		*3*	*2*				*3*	*17*	*14 RC*	*I*	*MA*			
STX/Tam.	*3*		*3*	*2*				*2*	*15*		*IV*	*PR*			
Yellow-crowned Night-Heron	**3**	**4**	**3**	**3**	**1**	**2**	**16**								
Southeast U.S. Region	**3**		**4**	**3**				**5**	**22**	**17 RC, S**	**I**	**MA**	**>80 us-can (40 gl)**		
EP (BCR 20)	**3**		**3**	**3**				**1**							
OP (BCR 21)	**3**		**3**	**3**				**2**	**18**				**3 reg. (1 gl)**		
WGCP (BCR 25)	**4**		**4**	**4**				**2**	**21**	**15 RC**	**I**	**MA**	**5 reg. (2 gl)**		
MAV (BCR 26)	**3**		**4**	**4**				**5**	**23**	**17 RC, S**	**I**	**MA**	**57 reg. (23 gl)**		
SECP (BCR 27)	**3**		**4**	**3**				**3**	**20**	**15 RC**	**I**	**MA**	**6 reg. (2 gl)**		
SACP	*3*		*4*	*3*				*3*	*20*	*15 RC*	*I*	*MA*			
EGCP	*3*		*4*	*3*				*3*	*20*	*15 RC*	*I*	*MA*			
APPS (BCR 28)	**3**		**3**	**3**				**2**	**18**		**IV**		**3 reg. (1 gl)**		

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PIED (BCR 29)	3		3	3				1			IV		<1 reg.		
PENFL (BCR 31)	4		4	3				3	21	16 RC	I	MA	4 reg. (2 gl)		
CENFL	*4*		*4*	*3*				*3*	*21*	*16 RC*	*I*	*MA*			
STFL	*4*		*4*	*3*				*4*	*22*	*16 RC*	*I*	*MA*			
TAMB (BCR 36)	3		3	3				1					2 reg.		
GCP (BCR 37)	3		4	3				5	22	17 RC, S	I	MA	20 reg. (8 gl)		
LA	*2*		*4*	*4*				*5*	*21*	*16 RC*	*I*	*MA*			
UTX	*4*		*4*	*3*				*4*	*23*	*17 RC*	*I*	*MA*			
CTX	*4*		*4*	*3*				*3*	*21*	*16 RC*	*I*	*MA*			
STX/Tam.	*3*		*3*	*3*				*2*	*18*		*IV*	*PR*			
White Ibis	2	4	3	3	3	3	18								
Southeast U.S. Region	2		4	4				5	25	18 RC, S	I	MA	100 us-can (31 gl)	10b	10
OP (BCR 21)	3		3	3				3	22		IV	PR	3 reg. (1 gl)	6a	
WGCP (BCR 25)	2		3	3				2	20		IV	PR	1 reg. (<1 gl)	6b	
MAV (BCR 26)	2		3	4				3	22	16 RC(n)	I	MA	13 reg. (4 gl)	8b	
SECP (BCR 27)	2		4	3				3	22	16 RC	I	MA	37 reg. (11 gl)	8a	
SACP	*2*		*4*	*3*				*3*	*22*	*16 RC*	*I*	*MA*	*(36) (10 gl)*		
EGCP	*3*		*4*	*3*				*2*	*22*	*16 RC*	*I*	*MA*	*(1) (1 gl)*		
APPS (BCR 28)	3		3	3				1			IV	PR	<1 reg.	2a	
PIED (BCR 29)	3		3	3				1			IV	PR	<1 reg.	4	

Species **Region, BCR, Subarea**	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
PENFL (BCR 31)	**3**		**4**	**3**				**4**	**24**	**18 RC**	**I**	**MA**	**27 reg. (8 gl)**	**8**	
CENFL	*3*		*4*	*3*				*4*	*24*	**18 RC**	*I*	*MA*			
STFL	*5*		*4*	*3*				*4*	*26*	**20 RC**	*I*	*IM*			
GCP (BCR 37)	**1**		**3**	**4**				**5**	**23**	**17 RC(n), S**	**I**	**MA**	**19 (6 gl)**	**8**	
LA	*1*		*3*	*4*				*5*	*23*	*17 RC(n), S*	*I*	*MA*	*(11 LA) (4 gl)*		
UTX	*2*		*3*	*3*				*5*	*23*	*17*	*IV*	*PR*	*(8 TX) (2 gl)*		
CTX	*2*		*3*	*3*				*4*	*22*		*IV*	*PR*			
STX/Tam.	*3*		*3*	*3*				*2*	*21*		*IV*	*PR*			
Glossy Ibis	**1**	**3**	**2**	**2**	**1**	**1**	**10**								
Southeast U.S. Region	**2**		**2**	**2**				**3**	**14**		**IV**	**PR**	**>50 us-can (1 gl)**	**6**	**6a**
MAV (BCR 26)	**3**		**2**	**2**				**2**	**14**		**IV**	**PR**	**26 reg.**	**5a**	
SECP (BCR 27)	**4**		**3**	**2**				**3**	**15**	**14 RC, s**	**I**	**MA**	**44 reg.**	**6b**	
SACP	*4*		*3*	*2*				*3*	*17*	*14 RC, s*	*I*	*MA*	*(43)*		
EGCP	*3*		*2*	*2*				*2*	*14*		*IV*	*PR*	*(1)*		
PENFL (BCR 31)	**5**		**3**	**2**				**5**	**20**	**17 RC, s**	**I**	**MA**	**29 reg.**	**5a**	
CENFL	*1*		*2*	*2*				*4*	*14*		*IV*	*PR*			
STFL	*5*		*3*	*2*				*5*	*20*	*17 RC*	*I*	*MA*			
GCP (BCR 37)	1		2	2				**3**	**13**		**IV**	**PR**	**1 reg.**	**2b**	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
LA	*1*		*2*	*2*				*3*	*13*		*IV*	*PR*	*(0.7 LA)*		
UTX	*1*		*2*	*2*				*2*	*12*		*IV*	*PR*	*(0.3 TX)*		
White-faced Ibis	**1**	**3**	**3**	**3**	**1**	**1**	**12**								
Southeast U.S. Region	**1**		**3**	**3**				**3**	**15**		**IV**	**PR**	**40 us-can (4 gl)**	**8**	**8a**
OP (BCR 21)	**3**		**3**	**3**				**2**	**16**				**<1**	**1**	
WGCP (BCR 25)	**3**		**3**	**3**									**<1**	**2b**	
MAV (BCR 26)	**3**		**3**	**3**				**1**			**IV**	**PR**			
TAMB (BCR 36)	**3**		**3**	**3**				**2**	**16**				**<1**	**1**	
GCP (BCR 37)	**3**		**3**	**3**				**5**	**19**	**15 s**	**II**	**PR**	**99 (4 gl)**	**8**	
LA	*1*		*3*	*3*				*5*	*17*		*IV*	*PR*	*(97 LA)*		
UTX	*2*		*3*	*3*				*3*	*16*		*IV*	*PR*	*(2 TX)*		
CTX	*5*		*4*	*3*				*3*	*20*	*16 RC*	*I*	*IM*			
STX/Tam.	*3*		*3*	*3*				*1*							
Roseate Spoonbill	**1**	**4**	**3**	**3**	**1**	**1**	**13**								
Southeast U.S. Region	**2**		**3**	**3**				**3**	**17**		**IV**	**PR**	**100 us-can (2 gl)**	**6a**	**7**
MAV (BCR 26)	**3**		**3**	**3**				**2**	**17**		**IV**	**PR**	**4 reg.**	**4**	
PENFL (BCR 31)	**5**		**4**	**3**				**3**	**21**	**17 RC**	**I**	**IM**	**15 reg.**	**5**	
CENFL	*1*		*3*	*3*				*3*	*16*		*IV*	*PR*			
STFL	*5*		*5*	*3*				*4*	*23*	*19 RC*	*I*	*CR*			
GCP (BCR 37)	**1**		**3**	**3**				**5**	**18**	**14 s**	**II**	**PR**	**81 reg. (2 gl)**	**6a**	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
LA	*1*		*3*	*3*				*5*	*18*	*14 s*	*II*	*PR*	*(30 LA)*		
UTX	*2*		*3*	*3*				*4*	*18*	*14 s*	*II*	*PR*	*(51 TX)*		
CTX	*2*		*3*	*3*				*4*	*18*	*14 s*	*II*	*PR*			
STX/Tam.	*4*		*4*	*3*				*4*	*21*	17 RC	*I*	*MA*			
Wood Stork	**4**	**4**	**4**	**3**	**1**	**1**	**17**								
(SE US breeding pop.)	**5**	**5**	**5**	**5**	**4**	**4**									
Southeast U.S. Region	**5**		**5**	**5**				**5**	**33/26**	**24/20 RC, S**	**I**	**CR**	**100 us-can (20 gl)**	**7a**	**8**
SECP (BCR 27)	**3**		**5**	**5**				**3**	**29/22**	**20/16 RC**	**I**	**CR**	**40 reg. (8 gl)**	**6**	
SACP	*3*		*5*	*5*				*3*	*29/22*	*20/16 RC*	*I*	*CR*	*(40) (8 gl)*		
PENFL (BCR 31)	**4**		**5**	**5**				**5**	**32/25**	**23/19 RC, S**	**I**	**CR**	**60 reg. (12 gl)**	**7b**	
CENFL	*4*		*5*	*5*				*5*	*32/25*	*23/19 RC, S*	*I*	*CR*			
STFL	*5*		*5*	*5*				*5*	*33/26*	*24/20 RC, S*	*I*	*CR*			
Greater Flamingo	**2**	**3**	**4**	**3**	**3**	**3**	**18**								
Southeast U.S. Region	**5**		**5**	**3**				**2**	**24**	**18 RC**	**I**	**CR**	**0 global (at present)**		
PENFL (BCR 31)	**5**		**5**	**3**				**2**	**24**	**18 RC**	**I**	**CR**			
STFL	*5*		*5*	3				*2*	*24*	*18 RC*	*I*	*CR*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Laughing Gull	**1**	**3**	**2**	**1**	**3**	**2**	**12**								
Southeast U.S. Region	**1**		**2**	**1**				**5**	**17**	**14 S**	**II**	**PC**	**~67 us-can (50 gl)**	**10 b**	**9 a**
SECP (BCR 27)	**1**		**2**	**1**				**4**	**16**		**IV**	**PC**	**27 reg. (14 gl)**	**8a**	
SACP	*1*		*2*	*1*				*4*	*16*		*IV*	*PC*	*(24) (12 gl)*		
EGCP	*3*		*2*	*1*				*4*	*18*		*IV*	*PC*	*(3) (2 gl)*		
PENFL (BCR 31)	**4**		**3**	**1**				**3**	**19**	**16 RC**	**I**	**MA**	**14 reg. (7 gl)**	**8b**	
CENFL	*4*		*3*	*2*				*3*	*20*	*16 RC*	*I*	*MA*			
STFL	*2*		*2*	*1*				*4*	*17*		*IV*	*PC*			
GCP (BCR 37)	**2**		**2**	**1**				**5**	**18**	**15 S**	**II**	**PR/PC**	**59 reg. (29 gl)**	**9a**	
LA	*1*		*2*	*1*				*4*	*16*		*IV*	*PC*	*(20 LA)*		
UTX	*2*		*2*	*1*				*4*	*17*		*IV*	*PC*	*(39 TX)*		
CTX	*2*		*2*	*1*				*5*	*18*		*II*	*PR/PC*			
STX/Tam.	*1*		*2*	*1*				*5*	*17*		*II*	*PR/PC*			
Herring Gull	**5**	**3**	**2**	**1**	**1**	**1**	**13**								
Southeast U.S. Region	**2**		**2**	**1**				**2**	**12**		**IV**	**PC**	**<1 us-can (<1 gl)**	**5a**	**5**
SECP (BCR 27)	**2**		**2**	**1**				**2**	**12**		**IV**	**PC**	**98 reg.**	**3a**	
SACP	*2*		*2*	*1*				*2*	*12*		*IV*	*PC*	*(98)*		
GCP (BCR 37)	**2**		**2**	**1**				1					**2 reg.**	**2**	
LA	*2*		*2*	*1*				*1*					*(2) hybrids w/Kelp Gull*		

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Great Black-backed Gull	**4**	**4**	**2**	**1**	**3**	**2**	**16**								
Southeast U.S. Region	**2**		**2**	**1**				**2**	**16**		**IV**	**PC**	**<1 us-can (<1 gl)**	**4b**	**3**
SECP (BCR 27)	**2**		**2**	**1**				**2**	**16**		**IV**	**PC**	**100 reg.**	**4b**	
SACP	*2*		*2*	*1*				*2*	*15*		*IV*	*PC*	*(100)*		
Gull-billed Tern	**4**	**4**	**4**	**2**	**3**	**2**	**19**			**15 CC b**					
Southeast U.S. Region	**4**		**4**	**2**				**5**	**24**	**20 RC**	**I**	**MA**	**>90 us-can (6 gl)**	**6**	**6a**
MAV (BCR 26)	**3**		**4**	**2**				**1**			**I V**	**PR**	**1 reg.**	**2**	
SECP (BCR 27)	**4**		**4**	**2**				**3**	**22**	**18 RC**	**I**	**MA**	**17 reg. (1 gl)**	**5b**	
SACP	*4*		*4*	*2*				*3*	*22*	*18 RC*	*I*	*MA*	*(15) (1 gl)*		
EGCP	*3*		*4*	*2*				*3*	*21*	*17 RC*	*I*	*MA*	*(2)*		
PENFL (BCR 31)	**3**		**4**	**2**				**2**	**20**	**16 RC**	**I**	**MA**	**1 reg.**	**2**	
CENFL	*3*		*4*	*2*				*2*	*20*	***16 RC***	*I*	*MA*			
STFL	*3*		*4*	*2*				*1*			*IV*	*PR*			
TAMB (BCR 36)	**3**		**4**	**2**				**1**			**IV**	**PR**			
GCP (BCR 37)	**4**		**4**	**2**				**5**	**24**	**20 RC, S**	**I**	**MA**	**81 reg. (5 gl)**	**6**	
LA	*3*		*4*	*2*				*3*	*21*	*17 RC*	*I*	*MA*	*(14 LA)*		
UTX	*4*		*4*	*2*				*3*	*22*	*18 RC*	*I*	*MA*	*(67 TX)*		
CTX	*4*		*4*	*2*				*5*	*24*	*20 RC, S*	*I*	*MA*			
STX/Tam.	*3*		*3*	*2*				*4*	*21*	*17*	*IV*	*PR*			

Species **Region, BCR, Subarea**	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
Caspian Tern	**1**	**4**	**3**	**2**	**2**	**2**	**14**								
Southeast U.S. Region	**3**		**3**	**2**				**3**	**19**		**IV**	**PR**	**5 us-can (2 gl)**	**6b**	**6**
SECP (BCR 27)	**2**		**3**	**2**				**3**	**18**		**IV**	**PR**	**13 reg.**	**4**	
SACP	*2*		*3*	*2*				*3*	*18*		*IV*	*PR*	*(1)*		
EGCP	*3*		*3*	*2*				*3*	*19*		*IV*	*PR*	*(12)*		
PENFL (BCR 31)	**2**		**3**	**2**				**3**	**18**		**IV**	**PR**	**10 reg.**	**4b**	
CENFL	*2*		*3*	*2*				*3*	*18*		*IV*	*PR*	*(10)*		
GCP (BCR 37)	**4**		**3**	**2**				**4**	**21**	**17 RC, s**	**I**	**MA**	**77 reg. (2 gl)**	**6b**	
LA	*3*		*3*	*2*				*4*	*20*		*IV*	*PR*	*(34 LA)*		
UTX	*2*		*3*	*2*				*4*	*19*		*IV*	*PR*	*(43 TX)*		
CTX	*4*		*3*	*2*				*4*	*21*	*17 RC*	*I*	*MA*			
STX/Tam.	*4*		*3*	*2*				*3*	*20*		*IV*	*PR*			
Royal Tern	**3**	**4**	**3**	**2**	**3**	**3**	**18**								
Southeast U.S. Region	**3**		**3**	**2**				**5**	**23**	**18 S**	**II**	**PR**	**>75 us-can (50 gl)**	**9**	**9a**
SECP (BCR 27)	**3**		**3**	**2**				**5**	**23**	**18 S**	**II**	**PR**	**43 reg. (22 gl)**	**8**	
SACP	*3*		*3*	*2*				*5*	*23*	*18 S*	*II*	*PR*	*(39) (20 gl)*		
EGCP	*3*		*3*	*2*				*3*	*21*		*IV*	*PR*	*(4) (2 gl)*		
PENFL (BCR 31)	**3**		**3**	**2**				**4**	**22**	**17**	**IV**	**PR**	**3 reg. (1 gl)**	**6**	
CENFL	*3*		*3*	*2*				*4*	*22*	*17*	*IV*	*PR*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
STFL	*3*		*3*	*2*				*2*	*20*						
GCP (BCR 37)	**3**		**3**	**2**				**5**	**23**	**18 S**	**II**	**PR**	**54 reg. (27 gl)**	**8a**	
LA	*3*		*3*	*2*				*5*	*23*	*18 S*	*II*	*PR*	*(31) (15 gl)*		
UTX	*3*		*3*	*2*				*5*	*23*	*18 S*	*II*	*PR*	*(23) (12 gl)*		
CTX	*3*		*3*	*2*				*5*	*23*	*18 S*	*II*	*PR*			
STX/Tam.	*3*		*3*	*2*				*2*	*20*		*IV*	*PR*			
Sandwich Tern	**2**	**4**	**3**	**2**	**3**	**3**	**17**								
Southeast U.S. Region	**4**		**3**	**2**				**5**	**24**	**19 RC, S**	**I**	**MA**	**>90 us-can (34 gl)**	**9b**	**9**
SECP (BCR 27)	**4**		**3**	**2**				**4**	**23**	**18 RC**	**I**	**MA**	**11 reg. (4 gl)**	**7b**	
SACP	*4*		*3*	*2*				*4*	*23*	*18 RC*	*I*	*MA*	*(9) (3 gl)*		
EGCP	*4*		*3*	*2*				*3*	*22*	*17 RC*	*I*	*MA*	*(2) (1 gl)*		
PENFL (BCR 31)	**3**		**4**	**2**				**3**	**22**	**17 RC**	**I**	**MA**	**1 (1 gl)**	**4a**	
PENFL	*3*		*4*	*2*				*3*	*22*	*17 RC*	*I*	*MA*			
STFL (NB)	*2*		*3*	*2*				*3*	*20*		*IV*	*PR*			
GCP (BCR 37)	**5**		**4**	**2**				**5**	**26**	**21 RC, S**	**I**	**IM**	**88 reg. (29 gl)**	**8a**	
LA	*5*		*4*	*2*				*5*	*26*	*21 RC, S*	*I*	IM	*(76 LA) (26 gl)*		
UTX	*4*		*4*	*2*				*3*	*23*	*18 RC*	*I*	*MA*	*(12 TX) (3 gl)*		
CTX	*4*		*4*	*2*				*3*	*23*	*18 RC*	*I*	*MA*			
STX/Tam.	*3*		*3*	*2*				*3*	*21*		*IV*	*PR*			

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Roseate Tern	**4**	**5**	**4**	**3**	**3**	**3**	**22**			**16 CC b**					
(North American-West Indies/Florida breeding pops.)	**4**	**5**	**4**	**3**	**5**	**5**									
Southeast U.S. Region	**3**		**4**	**3**				**2**	**27/23**	**19/17 RC**	**I**	**MA**	**7 us-can (1 gl)**	**4**	**5**
PENFL (BCR 31)	**3**		**4**	**3**				**2**	**27/23**	**19/17 RC, s**	**I**	**MA**	**100 reg.**	**4**	
STFL	*3*		*4*	*3*				*2*	*27/23*	*19/17 RC*	*I*	*MA*	*(100)*		
Common Tern	**5**	**3**	**3**	**3**	**1**	**1**	**16**						**<1 global**		
(Atlantic-Gulf Coast breeding pops.)	**5**	**4**	**4**	**3**	**5**	**4**									
Southeast U.S. Region	**5**		**4**	**3**				**2**	**27/19**	**20/15 RC**	**I**	**IM**	**1 us-can (<1 gl)**	**6b**	**6**
SECP (BCR 27)	**5**		**4**	**3**				**2**	**27/19**	**20/15 RC, s**	**I**	**IM**	**98 reg.**	**6b**	
SACP	*5*		*4*	*3*				*2*	*27/19*	**20/15 RC**	*I*	*IM*	*(92)*		
EGCP	*2*		*4*	*3*				*1*					*(6)*		
GCP (BCR 37)	**5**		**5**	**3**				**2**	**28/20**	**21/16 RC**	**I**	**CR**	**2 reg.**	**2**	
LA	*3*		*5*	*3*				*2*	*26/18*	***19/14 RC***	*I*	*CR*	*(1 LA)*		
UTX	*5*		*5*	*3*				*2*	*28/20*	*21/16 RC*	*I*	*CR*	*(1 TX)*		
CTX	*5*		*5*	*3*				*2*	*28/20*	21/16 RC	*I*	*CR*			
STX/Tam.	*3*		*4*	*3*				*2*	*25/17*		*IV*	PR			
Forster's Tern	**2**	**4**	**3**	**2**	**3**	**2**	**15**								

Species **Region, BCR, Subarea**	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
Southeast U.S. Region	**3**		**3**	**2**				**3**	**20**	**16 S**	**II**	**PR**	**~20 us-can (20 gl)**	**7**	**7a**
SECP (BCR 27)	**3**		**3**	**2**				**2**	**19**		**IV**	**PR**	**16 reg. (3 gl)**	**6b**	
SACP	*3*		*3*	*2*				*2*	*19*		*IV*	*PR*	*(16) (3 gl)*		
GCP (BCR 37)	**5**		**3**	**2**				**5**	**24**	**20 RC, S**	**I**	**MA**	**84 reg. (17 gl)**	**7b**	
LA	*4*		*3*	*2*				*5*	*23*	*19 RC, S*	*I*	*MA*	*(39 LA) (8 gl)*		
UTX	*5*		*3*	*2*				*4*	*23*	*19 RC, S*	*I*	*MA*	*(45 TX) (9 gl)*		
CTX	*5*		*3*	*2*				*4*	*23*	*19 RC, S*	*I*	*MA*			
STX/Tam.	*3*		*3*	*2*				*2*	*19*	*15*	*IV*	*PR*			
Least Tern	**4**	**4**	**4**	**3**	**3**	**2**	**20**			**15 CC b**					
Southeast U.S. Region	**4**		**4**	**3**				**5**	**25**	**20 RC, S**	**I**	**MA**	**>75 us-can (40 gl)**		
(Interior subsp./pop.)	**4**	**5**	**4**	**3**	**4**	**3**							**15 global**		
Southeast U.S. Region	**2**		**4**	**3**				**5**	**26/23**	**20/18 RC**	**I**	**MA**	**>90 us-can**	**7b**	**7**
OP (BCR 21)	**3**		**4**	**3**				**4/2**	**26/23**	**20/16 RC**	**I**	**MA**	**7 reg. (1 gl)**	**5b**	
WGCP (BCR 25)	**3**		**4**	**3**				**4/2**	**26/23**	**20/16 RC**	**I**	**MA**	**12 reg. (2 gl)**	**5**	
MAV (BCR 26)	**2**		**4**	**3**				**5/3**	**26/23**	**20/16 RC, S**	**I**	**MA**	**73 reg. (11 gl)**	**6**	
SECP (BCR 27)	**2**		**4**	**3**				**3/2**	**24/21**	**18/15 RC**	**I**	**MA**	**6 reg. (1 gl)**	**4a**	
EGCP (KY, TN)	*2*		*4*	*3*				*3/2*	*24/21*	*18/15 RC*	*I*	*MA*	*(6) (1 gl)*		
TAMB (BCR 36)	**2**		**4**	**3**				**2**	**23/20**	17/15 RC	**I**	**MA**	**2 reg. (<1 gl)**	**4b**	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
(Western Atl. Coastal subsp./pop.)	**4**	**4**	**4**	**3**	**3**	**2**							**25 global**		
Southeast U.S. Region	**4**		**4**	**3**				**5**	**25**	**20 RC, S**	**I**	**MA**	**>60 us-can**	**8b**	**8**
SECP (BCR 27)	**3**		**4**	**3**				**5**	**24**	**19 RC, S**	**I**	**MA**	**62 reg. (16 gl)**	**7a**	
SACP	*3*		*4*	*3*				*5*	*24*	*19 RC, S*	*I*	*MA*	*(46) (12 gl)*		
EGCP	*4*		*4*	*3*				*4*	*24*	*19 RC*	*I*	*MA*	*(16) (4 gl)*		
PENFL (BCR 31)	**3**		**4**	**3**				**5**	**24**	**19 RC, S**	**I**	**MA**	**24 reg. (6 gl)**	**6a**	
CENFL	*3*		*4*	*3*				*4*	*23*	*18 RC*	*I*	*MA*			
STFL	*3*		*4*	*3*				*5*	*24*	*19 RC*	*I*	*MA*			
GCP (BCR 37)	**5**		**4**	**3**				**4**	**25**	**20 RC, S**	**I**	**IM**	**14 reg. (4 gl)**	**6**	
LA	*5*		*4*	*3*				*4*	*25*	*20 RC*	*I*	*IM*	*(10 LA) (3 gl)*		
UTX	*4*		*4*	*3*				*4*	*24*	*19 RC*	*I*	*MA*	*(4 TX) (1 gl)*		
CTX	*4*		*4*	*3*				*4*	*24*	*19 RC*	*I*	*MA*			
STX/Tam.	*3*		*3*	*3*				*4*	*22*	*17*	*IV*	*PR*			
Bridled Tern	**4**	**4**	**3**	**2**	**3**	**3**	**19**			**14 CC c**					
Southeast U.S. Region	**2**		**3**	**2**				**1**			**IV**	**PR**	**100 us-can (<1 gl)**	**1**	**1**
PENFL (BCR 31)	**2**		**3**	**2**				**1**			**IV**	**PR**	**100 reg.**	**1**	
STFL	*2*		*3*	*2*				*1*			*IV*	*PR*	*(100)*		
Sooty Tern	**3**	**2**	**3**	**2**	**3**	**2**	**15**								
Southeast U.S. Region	**2**		**3**	**2**				**5**	**19**	**15 s**	**II**	**PR**	**100 us-can (<1 gl)**	**8**	**8a**

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SECP (BCR 27)	**2**		**3**	**2**				**1**					**<1 reg.**	**1**	
SACP	*2*		*3*	*2*				*1*					*(<1)*		
PENFL (BCR 31)	**2**		**3**	**2**				**5**	**19**	**15 s**	**II**	**PR**	**99 reg.**	**8**	
STFL	*2*		*3*	*2*				*5*	*19*	*15 s*	*II*	*PR*			
GCP (BCR 37)	**2**		**3**	**2**				**1**					**<1 reg.**	**2**	
Brown Noddy	**3**	**3**	**3**	**2**	**3**	**2**	**16**								
Southeast U.S. Region	**2**		**3**	**2**				**4**	**19**	**15 s**	**II**	**PR**	**100 us-can (<1 gl)**	**6**	**6a**
PENFL (BCR 31)	**2**		**3**	**2**				**4**	**19**	**15 s**	**II**	**PR**	**100 reg.**	**6**	
STFL	*2*		*3*	*2*				*4*	*19*	*15 s*	*II*	*PR*	*(100)*		
Black Skimmer	**4**	**4**	**4**	**3**	**3**	**3**	**21**			**15 CC b**					
Southeast U.S. Region	**4**		**4**	**3**				**5**	**26**	**20 RC, S**	**I**	**MA**	**~35 us-can (20 gl)**	**8b**	**8**
MAV (BCR 26)	**2**		**4**	**3**				**2**	**21**	**15 RC**	**I**	**MA**	**<1 reg.**	**3b**	
SECP (BCR 27)	**4**		**4**	**3**				**5**	**26**	**20 RC, S**	**I**	**MA**	**24 reg. (5 gl)**	**6**	
SACP	*4*		*4*	*3*				*5*	*26*	*20 RC, S*	*I*	*MA*	*(20) (4 gl)*		
EGCP	*3*		*4*	*3*				*3*	*23*	*17 RC*	*I*	*MA*	*(4) (1 gl)*		
PENFL (BCR 31)	**4**		**4**	**3**				**5**	**26**	**20 RC**	**I**	**MA**	**12 reg. (2 gl)**	**5**	
CENFL	*4*		*4*	*3*				*5*	*26*	*20 RC*	*I*	*MA*			
STFL	*3*		*4*	*3*				*3*	*23*	*17 RC*	*I*	*MA*			
GCP (BCR 37)	**4**		**4**	**3**				**5**	**26**	**20 RC, S**	**I**	**MA**	**64 reg. (13 gl)**	**7**	

Species Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
LA	*3*		*4*	*3*				*5*	*25*	*19 RC, S*	*I*	*MA*	*(24 LA) (4 gl)*		
UTX	*4*		*4*	*3*				*5*	*26*	*20 RC, S*	*I*	*MA*	*(40 TX) (9 gl)*		
CTX	*4*		*4*	*3*				*5*	*26*	*20 RC, S*	*I*	*MA*			
STX/Tam.	*3*		*3*	*2*				*5*	*23*	*18*	*IV*	*PR*			

KEY:

Region/BCRS/Subarea:

Southeast U.S Region.: All Bird Conservation Regions (BCRs) making up the Southeast U.S. Waterbird Conservation Planning Region
EP (BCR 20): Edwards Plateau (TX)
OP (BCR 21): Oaks and Prairies (TX, OK)
WGCP (BCR 25): West Gulf Coastal Plain-Ouachita Mountains (OK, AR, TX, LA)
MAV (BCR 26): Mississippi Alluvial Valley (IL, MO, KY, TN, MS, AR, LA)
SECP (BCR 27): Southeastern Coastal Plain (KY, TN, LA, MS, AL, FL, GA, SC, NC, VA)
SACP:: South Atlantic Coastal Plain (VA, NC, SC, GA, FL east of Apalachicola watershed)
EGCP: East Gulf Coastal Plain (KY, TN, LA, MS, AL, FL west of Apalachicola watershed)
APPS (BCR 28): Appalachians (AL, TN, KY, WV, OH, GA, SC, NC, VA, MD, PA, NY, NJ); many distinct physiographic areas with emphasis here on the Southern Appalachians including Southern Blue Ridge, Southern Ridge and Valley and Southern Cumberland Plateau, Northern Cumberland Plateau, (less emphasis on Mid Atlantic Ridge and Valley and Allegheny Mountains, and Ohio Hills). With the exception of Great Blue Heron and Green Heron found throughout this BCR, almost all species treated here when recorded in the Appalachians are mostly restricted to the Southern Ridge and Valley especially along the Tennessee River Valley (AL, TN, GA)
PIED (BCR 29): Piedmont (AL, GA, SC, NC, VA, MD, PA, NJ) with emphasis here on Southern Piedmont (AL, GA, SC, NC)
PENFL (BCR 31): Peninsular Florida (FL)
CENFL: Central Florida, essentially north of Lake Okeechobee (Fort Myers and northward on Gulf side, Fort Lauderdale on Atlantic side) on to northern extent of black mangrove on both coasts and Florida scrub.
STFL: Subtropical Florida, essentially south from Lake Okeechobee (Fort Myers and Fort Lauderdale) to include Florida Keys, Dry Tortugas
TAMB (BCR 36): Tamaulipan Brushlands (TX, Tam.)
GCP (BCR 37): Gulf Coastal Prairies (LA, TX)
LA: Louisiana including both Deltaic and Chenier Plains

UTX: Upper Texas Coast from Sabine River to East Matagorda Bay
CTX: Central Texas Coast from east Matagorda Bay to Baffin Bay
STX/Tam.:South Texas Coast from Baffin Bay (Tamaulipan Prairies, Laguna Madre, Padre Island) south into Tamaulipas, Mexico.

<u>Factor Scores</u>:

PT = Population Trend

5 = Definite decrease
4 = Possible decrease
3 = Trend uncertain, No data
2 = Possible increase, stable
1 = Definite increase

PT was derived based on a combination of data sources, principally BBS tempered by local and state datasets for breeding species. For many species of waterbirds and most non-breeding species usually best professional judgement often based in part on continental trends shown in BBS and/or CBC. Since waterbird trends are often dramatic and not linear, an inspection of trend graphs was often required to make a judgment as to trend score, again tempered by local and state data sets if they existed.

Significant increase (BBS trend >1.36%/yr, P<0.10, df>13)	1		
Possible increase (>0.47 to 1.36%/ yr, P<0.35, w/any df)	2a		
Possible increase (>1.36%/yr, 0.1<P<0.35, df>13)	2a		
Possible increase (>1.36%/yr, P<0.10, df<13)	2a		
Stable (> -0.54 to < +0.47%/yr, and UCI<0.47 OR LCI>-0.54)	2b		
- except when trend is negative and P<0.10 and LCI<-0.54, then Possible decrease			
Trend uncertain (<-0.54%/yr or >0.47%/yr and P>0.35)	3		
Trend uncertain (>-0.54%/yr and <0.47%/yr and UCI>0.47 AND LCI<-0.54)	3	No data	3
Possible decrease (either of next 3 options, but based on 6-13 degrees of freedom)	4		
Possible decrease (<-0.54 to -2.27%/yr, P=0.0-0.35)	4		
Possible decrease (<-2.27%/yr, 0.1<P<0.35)	4		
Significant decrease (<-2.27%/yr and P<0.10)	5		

PS=Population Size

5 = Rare (<50 thousand breeding individuals globally)
4 = Uncommon (50-500 thousand breeding individuals globally)
3 = Fairly Common (500 thousand-5 million breeding individuals globally)
2 = Common (5 million to 50 million breeding individuals globally)
1 = Abundant (50 million + breeding individuals globally)

PS based on best population estimates globally, for waterbirds most based on Delany and Scott (2002) and Kushlan et al. (2002).

TB and TN=Threats Breeding and Threats Non-breeding

5 = Extreme deterioration in the future suitability of breeding/non-breeding conditions is expected; species is in danger of regional extirpation or major range contraction, or has already been extirpated
4 = Severe deterioration in the future suitability of breeding/non-breeding conditions is expected
3 = Slight to moderate decline in the future suitability of breeding/non-breeding conditions is expected
2 = Expected future conditions for breeding/non-breeding populations are expected to remain stable; no known threats
1 = Expected future conditions for breeding/non-breeding populations are enhanced by human activities or land-uses; potentially a 'problem' species

BD and ND=Breeding Distribution and Non-breeding Distribution

5 = Very Local Distribution (<500,000 km2, or very restricted coastal areas or interior uplands)
4 = Local Distribution (>500,000 and <1,000,000 km2, or <1,600 km of coast)
3 = Moderate Distribution (>1,000,000 and <2,000,000 km2, or >1,600 to <5,000 km of coast)
2 = Widespread (>2,000,000 and <4,000,000 km2, or >5,000 to <8,000 km of coast)
1 = Very Widespread (>4,000,000 km2, or >8,000 km of coast)

RD=Relative Density (same concept formerly referred to as AI = Area Importance)

5 = Very High relative abundance (~50+% of maximum relative abundance)
4 = High relative abundance (~25-49% of maximum relative abundance)
3 = Moderate relative abundance (~10-24% of maximum relative abundance)
2 = Low relative abundance (~1-9% of maximum relative abundance)
1 = Peripheral, scattered occurrence.

RD reflects the "relative" density (or relative abundance) for each area within the range, scaled against its maximum relative abundance (i.e., the BCR supporting the highest relative abundance).

Total Score: is the sum of all seven factors. Since a new scoring system is in place using subset of the 7 factors, Total Score is primarily reported here to compare with past treatments as well as with the new Combined Scores that are now used for identifying conservation planning tiers.

Combine Score (concern and steward): Combined Scores are used to determine species status assessments, especially to indicate level of Continental Concern , Regional Concern, and Stewardship as explained below (the Partners in Flight approach). A species is considered to be of **Continental Concern (CC)** using this formula:

PT + PS + maximum of D (BD or ND) + maximum of T (TB or TN)

Species with Combined Scores of 14 or more, or with 13 with PT=5, up to a maximum possible of 20 are identified as of Continental Concern (also referred to as "Watchlist" species). At the continental scale, three types of Continental Concern species are identified as follows: (a) species with multiple concerns, (b) species with high threats and/or declining, and (c) species that are local and/or rare. Those species identified as of Continental Concern have the Continental Combined Score and type of Continental Concern displayed in the yellow (continental) field for this column.

Species with multiple causes for concern across their entire range: These species are considered by many to be of highest continental concern and of highest priority for conservation actions at national and international scales.

Moderately abundant or widespread species with declines or high threats: These species are on the Watch List primarily because they are declining and/or threatened throughout their range, though still fairly widespread or with moderately large populations.

Species with restricted distributions or low population size: These species are on the Watch List because they are restricted to a small range or have small global populations (often both). Many of these species are not known to be declining or seriously threatened at present, but many others. We recognize that these species with small populations and restricted range are particularly vulnerable to relatively minor changes from current conditions, whether or not their populations are currently in decline.

At the Regional scale of planning (i.e., Southeast U.S., each Bird Conservation Region [BCR], and subarea), species are considered to be of Continental Concern only when all the following criteria are met:

1) On PIF Continental Watch List (Concern at the Continental Scale)
2) Threat Score > 1 at the Regional scale
3) RD > 1 at the Regional scale

Notes: Threat Scores are regionally-derived scores in the season of interest (i.e., TB_R for Breeding Species, TN_R for Non-breeding birds);

In addition to identification of species as of Continental Concern at the Regional Scale, such species (as well as those not identified as of Continental Concern) are then determined whether or not they meet criteria for being species of **Regional Concern**, **(RC)** when all of the following criteria are met:

1) Regional Combined Score > 13 (out of a possible 25) at the Regional scale
2) Threat Score > 3 OR Threat=3 AND PT > 3 at the Regional scale
3) RD > 1 at the Regional scale

Notes: Regional Combined Score rules:

- Breeding = RD_B + TB_L + PT_B + PS + BD
- Non-breeding (Permanent Residents) = RD_B + TN_L + PT_B + PS + ND
- Non-breeding (Seasonal Residents) = RD_N + TN_L + PT_G + PS + ND

[additional non-breeding categories may be needed here]

[PT_N may be used in place of PT_B or PT_G in non-breeding total scores]

Finally, either as also of concern (continental and/or regional) or otherwise, species are identified for purposes of highlighting high regional conservation responsibility to maintain relatively large populations. These **Stewardship (S)** species are identified using the following criteria:

1) Pct Pop >= 25% OR [RD = 5 AND Pct Pop >= 5%]
2) Regional Combined Score > 13 (out of a possible 25) at the Regional scale
3) Threat Score > 1 at the Regional scale

Notes:
- Pct Pop is estimated percent of global population
- For species with at least 25% population in BCR, Threat >1 rule can be overridden by BCR lead to ensure highest responsibility species are not left off, but Threat score remains 1
- For species with at least 25% population in BCR, threat and total score criteria can be overridden by BCR lead to ensure highest responsibility species are not left off, but all scores remain unchanged

A few additional species with large populations at the regional scale, but representing small percentages of global populations (i.e., species established in temperate North America of otherwise tropical or Eastern Hemispheric distribution), also are identified as of stewardship responsibility **(s)** at the regional scale (e.g., Glossy Ibis, Sooty Tern, Brown Noddy)

Tier: There are four conservation tiers identified for planning and implementing priorities:

I=**Concern** including all species meeting at the regional scale both continental and regional concern criteria, regional concern criteria only, and continental concern only.

II=**Additional Stewardship** including all species meeting stewardship criteria not otherwise already identified in Tier I.

III=**Additional Legally Protected (Federal and/or State** including all legally protected species not otherwise identified in Tiers I or II.

IV=**Additional Local or Regional Interest Species** including all other species not otherwise identified in Tiers I, II, or III, that are of potential local or regional interest such as economically important as hunted or for promoting nature tourism, environmental indicators, subject to depredation concern, etc.

Action Level: Ultimately the most important factor for identifying priorities is identifying the level of action needed to effect conservation. Action levels, strongly implying conservation priorities when used in combination with regional combined score and percent of population, are identified when meeting the following criteria:

CR (Critical Recovery) meets criteria for Regional Concern Species with **TB/N=5**; critical recovery actions needed to prevent likely extirpation or to reintroduce a species that has been extirpated.

IM (Immediate Management) meets criteria for Regional Concern Species with **TB/N=4 and PT=5**; conservation action needed to reverse or stabilize significant, long-term population declines in species with small populations, or to protect species with the smallest populations for which trends are poorly known. Lack of action may lead to extirpations or extinction.

MA (Management Attention) meets criteria for Regional Concern Species with **TB/N=4 and PT<5, and TB/N=3 and PT=4 or 5**; management or other on-the-ground conservation actions needed to reverse or stabilize significant, long-term population declines in species that are still relatively abundant.

PR (Planning and Responsibility) meets criteria for (1) **Continental Concern Species that are not also of Regional Concern**; (2) **all species meeting criteria for Stewardship** that are not already also meeting continental or region concern criteria, and (3) **many local or regional interest species**; long-term Planning and Responsibility needed for species to ensure that sustainable populations are maintained for species for which a region has high responsibility for that species, not otherwise considered to be of regional concern.

PC (Large scale Population Control/Suppression) are species generally considered secure and increasing that may come into conflict with other species of higher conservation concern or other resources of interest.

PCL (Local Population Control) are species **g**enerally listed with action codes MA or PR across the planning region, but locally may be subject to population control measures to alleviate documented economic, environmental, or human health and safety conflicts, but only when economics and conservation implications have been thoroughly considered.

Percent of Responsibility, that is percent of populations within planning region with respect to global population estimates (Delany and Scott 2002, Kushlan et al. 2002) and temperate North America (U.S.-Canada) and within bird conservation region and physiographic area with respect to planning region estimates (based on collective estimates among State waterbird conservation coordinators).

Estimated Population Category was developed from collective estimates among state waterbird conservation coordinators and **Population Objective Category** provides suggested regional population targets.

[1]Key to population categories:
(1) <10 pairs

(2a) 40<60 pairs	(8a) 40,000<60,000 pairs
(2) 10-50 pairs	(8) 10,000-50,000 pairs
(2b) 1>20 pairs	(8b) 9,000>20,000 pairs
(3a) 90<200 pairs	(9a) 90,000<200,000 pairs
(3) 50-100 pairs	(9) 50,000-100,000 pairs
(3b) 40>60 pairs	(9b) 40,000>60,000 pairs

(4a) 400<600 pairs
(4) 100-500 pairs
(4b) 90>200 pairs

(5a) 900<2,000 pairs
(5) 500-1,000 pairs
(5b) 400>600 pairs

(6a) 4,000<6,000 pairs
(6) 1,000-5,000 pairs
(6b) 900>2,000 pairs

(7a) 9,000<20,000 pairs
(7) 5,000-10,000 pairs
(7b) 4,000>6,000 pairs

(10a) 400,000<600,000 pairs
(10) 100,000-500,000 pairs
(10b) 90,000>200,000 pairs

Status Assessment, Conservation Tiers and Action Levels, Responsibility, and Population Categories for the Southeast U.S. Waterbird Conservation Region
Breeding Non-Colonial Waterbirds (revised 4/20/2006)

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Least Grebe	**3**	**3**	**2**	**2**	**1**	**1**	12								
Southeast U.S. Region	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**	**>95 us-can (2 gl)**		
OP (BCR 21)	**3**		**3**	**3**				**2**	**16**		**IV**	**PR**	**10 reg.** (<1 gl)		
TAMB (BCR 36)	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**	**45 reg.** (1 gl)		
GCP (BCR 37)	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**	**45 reg.** (1 gl)		
CTX	*3*		*3*	*3*				*2*	*16*		*IV*	*PR*			
STX/Tam.	*3*		*3*	*2*				*4*	*17*		*IV*	*PR*			
Pied-billed Grebe	**2**	**3**	**3**	**2**	**1**	**1**	12								
Southeast U.S. Region	**4**		**4**	**3**				**3**	**19**	**15 RC**	**I**	**MA**	**<5 us-can (2 gl)**		
EP (BCR 20)	**3**		**4**	**3**				**1**							
OP (BCR 21)	**3**		**4**	**3**				**1**							
WGCP (BCR 25)	**3**		**4**	**3**				**1**							
MAV (BCR 26)	**4**		**4**	**3**				**2**	**18**	**14 RC**	**I**	**MA**	**15 reg. (< 1 gl)**		
SECP (BCR 27)	**4**		**4**	**3**				**2**	**18**	**14 RC, s**	**I**	**MA**	**20 reg. (< 1 gl)**		
SACP	*4*		*4*	*3*				*2*	*18*	*14 RC*	*I*	*MA*			
EGCP	*3*		*4*	*3*				*2*	*17*						
APPS (BCR 28)	**3**		**4**	**3**				**1**							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PIED (BCR 29)	3		4	3				1							
PENFL (BCR 31)	5		4	3				2	19	15 RC, s	I	IM	20 reg. (<1 gl)		
CENFL	*5*		*4*	*3*				*2*	*19*	*15 RC*	*I*	*IM*			
STFL	*4*		*4*	*3*				*3*	*19*	*15 RC*	*I*	*MA*			
TAMB (BCR 36)	3		4	3				2	17		IV	PR	5 reg. (<1 gl)		
GCP (BCR 37)	4		4	3				3	19	15 RC, s	I	MA	40 reg. (1 gl)		
LA	*4*		*4*	*3*				*3*	*19*	*15 RC*	*I*	*MA*			
UTX	*4*		*4*	*3*				*3*	*19*	*15 RC*	*I*	*MA*			
CTX	*4*		*4*	*3*				*3*	*19*	*15 RC*	*I*	*MA*			
STX/Tam.	*2*		*4*	*3*				*2*	*16*						
Least Bittern	**4**	**3**	**3**	**3**	**1**	**1**	15								
Southeast U.S. Region	4		4	3				5	21	17 RC, S	I	MA	>75 us-can (48 gl)		
EP (BCR 20)	3		4	3				1							
OP (BCR 21)	3		4	3				2	17		IV	PR	2 reg. (1 gl)		
WGCP (BCR 25)	4		4	3				2	18	14 RC	I	MA	3 reg. (1 gl)		
MAV (BCR 26)	4		4	3				3	19	15 RC	I	MA	4 reg. (2gl)		
SECP (BCR 27)	4		4	3				3	19	15 RC	I	MA	4 reg, (2 gl)		
SACP	*4*		*4*	*3*				*3*	*19*	*15 RC*	*I*	*MA*			
EGCP	*4*		*4*	*3*				*3*	*19*	*15 RC*	*I*	*MA*			
APPS (BCR 28)	3		3	3				1							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PIED (BCR 29)	**3**		**4**	**3**				**2**	**17**		**IV**	**PR**	**<1 reg.**		
PENFL (BCR 31)	**4**		**4**	**3**				**5**	**21**	**17 RC, S**	**I**	**MA**	**42 reg. (20 gl)**		
CENFL	*4*		*4*	*3*				*4*	*20*	*16 RC, S*	*I*	*MA*			
STFL	*4*		*4*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
TAMB (BCR 36)	**3**		**4**	**3**				**1**							
GCP (BCR 37)	**4**		**4**	**3**				**5**	**21**	**17 RC, S**	**I**	**MA**	**46 reg. (22 gl)**		
LA	*4*		*4*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
UTX	*4*		*4*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
CTX	*4*		*4*	*3*				*4*	*20*	*16 RC*	*I*	*MA*			
STX/Tam.	*2*		*3*	*3*				*3*	*16*	*12*	*IV*	*PR*			
Black Rail	**5**	**4**	**4**	**4**	**5**	**5**	**27**			**18 CC a**					
Southeast U.S. Region	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**	**>65 us-can (40 gl)**		
SECP (BCR 27)	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**	**60 reg. (24 gl)**		
SACP	*4*		*4*	*4*				*5*	*32*	*23 RC*	*I*	*IM*			
EGCP	*3*		*4*	*4*				*2*	*27*	*18 RC*	*I*	MA			
APPS (BCR 28)	**5**		**5**	**5**				**1**							
PIED (BCR 29)	**5**		**4**	**4**				**2**	**29**	**20 RC**	**I**	**IM**			
PENFL (BCR 31)	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**	**35 reg. (14 gl)**		
CENFL	*5*		*4*	*4*				*5*	*32*	*23 RC*	*I*	*IM*			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
GCP (BCR 37)	**5**		**4**	**4**				**3**	**30**	*21 RC*	**I**	**IM**	**5 reg. (2 gl)**		
LA	*3*		*4*	*4*				*2*	*27*	*18 RC*	*I*	*MA*			
UTX	*5*		*4*	*4*				*3*	*30*	*21 RC*	*I*	*IM*			
CTX	*5*		*4*	*4*				*3*	*30*	*21 RC*	*I*	*IM*			
Clapper Rail	**3**	**4**	**3**	**3**	**4**	**4**	21			**14 CC c**					
Southeast U.S. Region	**3**		**3**	**3**				**5**	**26**	**19 S**	**I**	**PR**	**>75 us-can (22 gl)**		
SECP (BCR 27)	**3**		**3**	**3**				**5**	**26**	**19 S**	**I**	**PR**	**48 reg. (10 gl)**		
SACP	*3*		*3*	*3*				*5*	*26*	*19 S*	*I*	*PR*			
EGCP	*3*		*3*	*3*				*5*	*26*	*19 S*	*II*	*PR*			
PENFL (BCR 31)	**4**		**3**	**3**				**4**	**26**	**19 RC**	**I**	**MA**	**8 reg. (2 gl)**		
CENFL	*4*		*3*	*3*				*4*	*26*	*19 RC*	*I*	*MA*			
STFL	*4*		*3*	*3*				*4*	*26*	*19 RC*	*I*	*MA*			
GCP (BCR 37)	**3**		**3**	**3**				**5**	**26**	**19 S**	**I**	**PR**	**44 reg. (10 gl)**		
LA	*3*		*3*	*3*				*5*	*26*	*19 S*	*I*	*PR*			
UTX	*3*		*3*	*3*				*5*	*26*	*19 S*	*I*	*PR*			
CTX	*3*		*3*	*3*				*5*	*26*	*19 S*	*I*	*PR*			
STX/Tam.	*2*		*3*	*3*				*5*	*24*	*18 S*	*I*	*PR*			
King Rail	**5**	**4**	**4**	**3**	**2**	**3**	21			**16 CC a**					
Southeast U.S. Region	**5**		**4**	**3**				**5**	**26**	**20 RC, S**	**I**	**IM**	**>95 us-can (87 gl)**		
OP (BCR 21)	**3**		**4**	**3**				**2**	**21**	**15 RC**	**I**	**MA**	**8 reg. (7 gl)**		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
WGCP (BCR 25)	**5**		**4**	**3**				**2**	**23**	**17 RC**	**I**	**IM**	**2 reg. (2 gl)**		
MAV (BCR 26)	**5**		**4**	**3**				**2**	**23**	**17 RC**	**I**	**IM**	**2 reg. (2 gl)**		
SECP (BCR 27)	**4**		**4**	**3**				**3**	**23**	**17 RC**	**I**	**MA**	**12 reg. (10 gl)**		
SACP	*4*		*4*	*3*				*3*	*23*	*17 RC*	*I*	*MA*			
EGCP	*4*		*4*	*3*				*3*	*23*	*17 RC*	*I*	*MA*			
APPS (BCR 28)	**3**		**4**	**3**				**2**	**21**	**15 RC**	**I**	**MA**			
PIED (BCR 29)	**5**		**4**	**3**				**2**	**23**	**17 RC**	**I**	**IM**			
PENFL (BCR 31)	**4**		**4**	**3**				**4**	**24**	**18 RC**	**I**	**MA**	**11 reg. (10 gl)**		
CENFL	*4*		*4*	*3*				*3*	*23*	*17 RC*	*I*	*MA*			
STFL	*4*		*4*	*3*				*5*	*25*	*19 RC*	*I*	*MA*			
TAMB (BCR 36)	**3**		**4**	**3**				**1**					**1 reg. (1 gl)**		
GCP (BCR 37)	**5**		**4**	**3**				**5**	**26**	**20 RC, S**	**I**	**IM**	**64 reg. (55 gl)**		
LA	*5*		*4*	*3*				*5*	*26*	*20 RC, S*	*I*	*IM*			
UTX	*4*		*4*	*3*				*5*	*25*	*19 RC, S*	*I*	*MA*			
CTX	*5*		*4*	*3*				*4*	*25*	*19 RC*	*I*	*IM*			
STX/Tam.	*3*		*4*	*3*				*3*	*22*	*16 RC*	*I*	*MA*			
Purple Gallinule	**4**	**3**	**3**	**2**	**1**	**1**	14								
Southeast U.S. Region	**4**		**4**	**3**				**5**	**21**	**17 RC**	**I**	**MA**	**100 us-can (5 gl)**		
OP (BCR 21)	**4**		**4**	**3**				**2**	**18**	**14 RC**	**I**	**MA**	**1 reg. (<1 gl)**		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
WGCP (BCR 25)	3		4	3				2	19	14 RC	I	MA	2 reg. (<1 gl)		
MAV (BCR 26)	3		4	3				2	18	14 RC	I	MA	2 reg. (<1 gl)		
SECP (BCR 27)	5		4	3				3	20	16 RC	I	IM	10 reg. (1 gl)		
SACP	*5*		*4*	*3*				*3*	*20*	*16 RC*	*I*	*MA*			
EGCP	*3*		*4*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
PENFL (BCR 31)	3		4	3				3	18	14 RC	I	MA	12 reg. (1 gl)		
CENFL	*3*		*4*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
STFL	*3*		*4*	*3*				*5*	*20*	*16 RC*	*I*	*MA*			
TAMB (BCR 36)	3		4	3				2	17	13	IV	PR			
GCP (BCR 37)	5		4	3				5	22	18 RC, s	I	IM	72 reg. (3 gl)		
LA	*5*		*4*	*3*				*5*	*22*	*18 RC*	*I*	*IM*			
UTX	5		*4*	*3*				*5*	*21*	*18 RC*	*I*	*IM*			
CTX	*4*		*4*	*3*				*4*	*20*	*16 RC*	*I*	*MA*			
STX/Tam.	*4*		*3*	*3*				*5*	*20*	*16 RC*	*I*	*MA*			
Common Moorhen	2	2	3	2	1	1	11								
Southeast U.S. Region	1		3	3				5	16		IV	PR	>95 us-can (13 gl)		
OP (BCR 21)	3		3	3				2	15		IV	PR	1 reg.		
WGCP (BCR 25)	3		3	3				3	16		IV	PR	1 reg.		
MAV (BCR 26)	3		3	3				3	16		IV	PR	6 reg. (1 gl)		
SECP (BCR 27)	5		3	3				3	18	14 RC	I	MA	12 reg. (1 gl)		

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
SACP	*5*		*3*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
EGCP	*5*		*3*	*3*				*3*	*18*	*14 RC*	*I*	*MA*			
APPS (BCR 28)	**3**		**3**	**3**				**1**					**1 reg.**		
PIED (BCR 29)	**3**		**3**	**3**				**2**	**15**		**IV**	**PR**	**1 reg.**		
PENFL (BCR 31)	**2**		**3**	**3**				**5**	**17**		**IV**	**PR**	**36 reg. (5 gl)**		
CENFL	*2*		*3*	*3*				*5*	*17*		*IV*	*PR*			
STFL	*2*		*3*	*3*				*4*	*16*		*IV*	*PR*			
TAMB (BCR 36)	**5**		**3**	**3**				**2**	**17**		**IV**	**PR**	**1 reg.**		
GCP (BCR 37)	**1**		**3**	**3**				**5**	**16**		**IV**	**PR**	**42 reg. (6 gl)**		
LA	*1*		*3*	*3*				*5*	*16*		*IV*	*PR*			
UTX	*1*		*3*	*3*				*5*	*16*		*IV*	*PR*			
CTX	*1*		*3*	*3*				*4*	*15*		*IV*	*PR*			
STX/Tam.	*3*		*2*	*2*				*5*	*16*	*13*	***IV***	*PR*			
American Coot	**4**	**3**	**3**	**3**	**1**	**1**	15								
Southeast U.S. Region	**5**		**4**	**3**				**3**	**20**	**16 RC**	**I**	**IM**	**<5 us-can (3 gl)**		
EP (BCR 20)	**3**		**4**	**3**				**1**							
OP (BCR 21)	**3**		**4**	**3**				**1**							
WGCP (BCR 25)	**3**		**4**	**3**				**2**	17				2 reg. (<1 gl)		
MAV (BCR 26)	**3**		**4**	**3**				**2**	**17**				3 reg. (<1 gl)		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SECP (BCR 27)	**5**		**4**	**3**				**2**	**19**	**15 RC**	**I**	**IM**	28 reg. (1 gl)		
SACP	*5*		*4*	*3*				*2*	*19*	*15 RC*	*I*	*IM*			
EGCP	*3*		*4*	*3*				*2*	*17*						
APPS (BCR 28)	**3**		**4**	**3**				**1**					1 reg. (<1 gl)		
PIED (BCR 29)	**3**		**4**	**3**				**2**	**17**				1 reg. (<1 gl)		
PENFL (BCR 31)	**5**		**4**	**3**				**2**	**19**	**15 RC**	**I**	**IM**	4 reg. (<1 gl)		
CENFL	*5*		*4*	*3*				*2*	*20*	*15 RC*	*I*	*IM*			
STFL	*5*		*4*	*3*				*2*	*20*	*15 RC*	*I*	*IM*			
TAMB (BCR 36)	**2**		**4**	**3**				**2**	16				3 reg. (<1 gl)		
GCP (BCR 37)	**2**		**4**	**3**				**4**	**18**	**14 RC**	**I**	**MA**	**58 reg. (2 gl)**		
LA	*2*		*4*	*3*				*3*	*17*						
UTX	*2*		*4*	*3*				*3*	*17*						
CTX	*2*		*4*	*3*				*4*	*18*	*14 RC*	*I*	*MA*			
STX/Tam.	*2*		*2*	*2*				*4*	*15*						
Limpkin	**4**	**3**	**3**	**3**	**1**	**1**	15								
(Florida pop.)	**4**	**5**	**4**	**4**	**5**	**5**									
Southeast U.S. Region	**4**		**4**	**4**				**5**	**32/22**	**23/17 RC**	**I**	**MA**	**100 us-can (1 gl)**	**6**	**7**
SECP (BCR 27)	**5**		**4**	**4**				**3**	**31/21**	**22/16 RC**	**I**	**IM**	**20 reg. (<1 gl)**	**6b**	
SACP	*5*		*4*	*4*				*3*	*31/21*	*22/16 RC*	*I*	*IM*	*(24)*		
EGCP	*5*		*4*	*4*				*2*	*30/20*	*21/15 RC*	*I*	*IM*	*(1, ext?)*		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PENFL (BCR 31)	**4**		**4**	**4**				**5**	**32/22**	**23/17RCs**	**I**	**MA**	**80 reg. (1 gl)**	**6**	
CENFL	*4*		*4*	*4*				*5*	*32/22*	*23/17RC s*	*I*	*MA*			
STFL	*4*		*4*	*4*				*5*	*32/22*	*23/17RC s*	*I*	*MA*			
Sandhill Crane	**1**	**3**	**3**	**3**	**1**	**3**	14								
(Mississippi subsp.)	**5**	**5**	**5**	**5**	**5**	**5**							**<1 global**		
Southeast U.S. Region	**5**		**5**	**5**				**5/2**	**35/24**	**25/16 RC**	**I**	**CR**	**100 us-can**		
SECP (BCR 27)	**5**		**5**	**5**				**5/2**	**35/24**	**25/16 RC**	**I**	**CR**	**100 regional**		
EGCP	*5*		*5*	*5*				*5/2*	*35/24*	*25/16 RC*	*I*	*CR*	*(100)*		
(Florida subsp.)	**1**	**5**	**3**	**3**	**5**	**5**							**3 us-can (3 gl)**		

KEY:
See Appendix 2-1

Status Assessment, Conservation Tiers and Action Levels, Responsibility, and Population Categories
for the Southeast U.S. Waterbird Conservation Region
***Nonbreeding Waterbirds* (revised 06/20/06)**

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Red-throated Loon	**4**	**4**	**3**	**3**	**1**	**1**	16								
Southeast U.S. Region	**5**		**3**	**4**				**5**	**23**	**19 RC**	**I**	**IM**	**<33 us-can (10 gl)**		
SECP (BCR 27)	**5**		**3**	**4**				**5**	**23**	**19 RC**	**I**	**IM**	**>95 regional**		
SACP	*5*		*3*	*4*				*5*	*23*	*19 RC*	*I*	*IM*	(~90)		
EGCP	*4*		*3*	*3*				*2*	*19*	*14 RC*	*I*	*MA*	(~5)		
PENFL (BCR 31)	**4**		**3**	**3**				2	**19**	*14 RC*	*I*	*MA*	(<5)		
CENFL	*4*		*3*	*3*				*2*	**19**	*14 RC*	*I*	*MA*			
Common Loon	**1**	**3**	**3**	**3**	**1**	**2**	13								
Southeast U.S. Region	**1**		**3**	**4**				**5**	**19**	**15 RC, S**	**I**	**MA**	**>33 us-can (25 gl)**		
EP (BCR 20)	**1**		**3**	**3**				**2**	**15**						
OP (BCR 21)	**1**		**3**	**3**				**2**	**15**						
WGCP (BCR 25)	**1**		**3**	**3**				**2**	**15**						
MAV (BCR 26)	**1**		**3**	**3**				**2**	**15**						
SECP (BCR 27)	**1**		**3**	**4**				**5**	**19**	**15 RC**	**I**	**MA**			
SACP	*1*		*3*	*4*				*5*	*19*	*15 RC*	*I*	*MA*			
EGCP	*1*		*3*	*3*				*4*	*17*		*IV*	*PR*			

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
APPS (BCR 28)	**1**		**3**	**3**				**2**	**15**						
PIED (BCR 29)	**1**		**3**	**3**				**2**	**15**						
PENFL (BCR 31)	**1**		**3**	**3**				3	**16**		IV	PR			
CENFL	*1*		*3*	*3*				*3*	**16**		IV	PR			
STFL	*1*		*3*	*3*				*2*	**15**		IV	PR			
TAMB (BCR 36)	**1**		**3**	**3**				**2**	**15**						
GCP (BCR 37)	**1**		**3**	**3**				**3**	**16**		**IV**	**PR**			
LA	*1*		*3*	*3*				*3*	*16*		*IV*	*PR*			
TX	*1*		*3*	*3*				*3*	*16*		*IV*	*PR*			
Tam.	*1*		*3*	*3*				*3*	*16*		*IV*	*PR*			
Pied-billed Grebe	**2**	**3**	**3**	**2**	**1**	**1**	12								
Southeast U.S. Region	**2**		**3**	**2**				**5**	**17**						
EP (BCR 20)	**2**		**3**	**2**				**5**	**17**						
OP (BCR 21)	**2**		**3**	**2**				**5**	**17**						
WGCP (BCR 25)	**2**		**3**	**2**				**4**	**16**						
MAV (BCR 26)	**2**		**3**	**2**				**4**	**16**						
SECP (BCR 27)	**2**		**3**	**2**				**4**	**16**						
SACP	*2*		*3*	*2*				*4*	*16*						
EGCP	*2*		*3*	*2*				*4*	*16*						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
APPS (BCR 28)	**2**		**3**	**2**				**3**	**15**						
PIED (BCR 29)	**2**		**3**	**2**				**3**	**15**						
PENFL (BCR 31)	**2**		**3**	**2**				**5**	**17**						
CENFL	*2*		*3*	*2*				*5*	*17*						
STFL	*2*		*3*	*2*				*4*	*16*						
TAMB (BCR 36)	**2**		**3**	**2**				**4**	**16**						
GCP (BCR 37)	**2**		**3**	**2**				**5**	**17**						
LA	*2*		*3*	*2*				*5*	*17*						
TX	*2*		*3*	*2*				*5*	*17*						
Tam.	*2*		*3*	*2*				*2*	*15*						
Horned Grebe	**5**	**3**	**3**	**3**	**1**	**2**	17			**13/5 CC b**					
Southeast U.S. Region	**5**		**3**	**3**				**5**	**22**	**18 RC**	**I**	**MA**	**>33 us-can (10 gl)**		
EP (BCR 20)	**5**		**3**	**3**				**1**							
OP (BCR 21)	**5**		**3**	**3**				**1**							
WGCP (BCR 25)	**5**		**3**	**3**				**2**	**19**	**15 RC**	**I**	**MA**			
MAV (BCR 26)	**5**		**3**	**3**				**2**	**19**	**15 RC**	**I**	**MA**			
SECP (BCR 27)	**5**		**3**	**3**				**5**	**22**	**18 RC**	**I**	**MA**			
SACP	*5*		*3*	*3*				*5*	*22*	*18 RC*	*I*	*MA*			
EGCP	*5*		*3*	*3*				*4*	*21*	*18 RC*	*I*	*MA*			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
APPS (BCR 28)	**5**		**3**	**3**				**1**							
PIED (BCR 29)	**5**		**3**	**3**				**2**	**19**	**15 RC**	**I**	**MA**			
PENFL (BCR 31)	**5**		**3**	**3**				**3**	**20**	**16 RC**	**I**	**MA**			
CENFL	*5*		*3*	*3*				*3*	*20*	*16 RC*	*I*	*MA*			
STFL	*5*		*3*	*3*				*2*	*19*	*15 RC*	*I*				
GCP (BCR 37)	**5**		**3**	**3**				**3**	**20**	**16 RC**	**I**	**MA**			
LA	*5*		*3*	*3*				*3*	*20*	*16 RC*	*I*	*MA*			
TX	*5*		*3*	*3*				*3*	*20*	*16 RC*	*I*	*MA*			
Red-necked Grebe	**2**	**4**	**3**	**3**	**1**	**2**	15								
Southeast U.S. Region	**2**		**3**	**3**				**2**							
SECP (BCR 27)	**2**		**3**	**3**				**2**							
SACP	*2*		*3*	*3*				*2*							
Eared Grebe	**1**	**3**	**3**	**3**	**1**	**2**	13								
Southeast U.S. Region	**1**		**3**	**3**				**3**	**16**						
EP (BCR 20)	**1**		**3**	**3**				**3**	**16**						
OP (BCR 21)	**1**		**3**	**3**				**3**	**16**						
WGCP (BCR 25)	**1**		**3**	**3**				**3**	**16**						
MAV (BCR 26)	**1**		**3**	**3**				**2**	**15**						
SECP (BCR 27)	**1**		**3**	**3**				**2**	**15**						

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
EGCP	*1*		*3*	*3*				*2*	*15*						
APPS (BCR 28)	**1**		**3**	**3**				**1**							
PIED (BCR 29)	**1**		**3**	**3**				**1**							
PENFL (BCR 31)	**1**		**3**	**3**				**1**							
CENFL	*1*		*3*	*3*				*1*							
STFL	*1*		*3*	*3*				*1*							
TAMB (BCR 36)	**1**		**3**	**3**				**3**	**16**						
GCP (BCR 37)	**1**		**3**	**3**				**3**	**16**						
LA	*1*		*3*	*3*				*3*	*16*						
TX	*1*		*3*	*3*				*3*	*16*						
Tam.	*1*		*3*	*3*				*3*	*16*						
Bermuda Petrel	**5**	**5**	**5**	**5**	**5**	**5**	30			**20 CC a**					
Southeast U.S. Region	**5**		**5**	**5**				**2**	**32**	**22 RC**	**I**	**CR**	**100 us-can (1 gl)**		
SECP (BCR 27)	**5**		**5**	**5**				**2**	**32**	**22 RC**	**I**	**CR**	**100 regional**		
SACP	*5*		*5*	*5*				*2*	*32*	*22 RC*	*I*	*CR*	(100)		
Black-capped Petrel	**5**	**5**	**5**	**3**	**5**	**3**	26			**20 CC a**					
Southeast U.S. Region	**5**		**5**	**3**				**5**	**31**	**21 RC, S**	**I**	**MA**	**100 us-can (100 gl)**		
SECP (BCR 27)	**5**		**5**	**3**				**5**	**31**	**21 RC, S**	**I**	**MA**	**100? Regional**		
SACP	*5*		*5*	*3*				*5*	*31*	*21 RC, S*	*I*	*MA*	*(100)*		

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
PENFL (BCR 31)	**5**		**5**	**3**				**3**	**29**	**19 RC**	**I**	**MA**	**>50**		
CENFL	*5*		*5*	*3*				*3*	*29*	*19 RC*	*I*	*MA*			
STFL	*5*		*5*	*3*				*3*	*29*	*19 RC*	*I*	*MA*			
Cory's Shearwater	**3**	**3**	**3**	**2**	**5**	**2**	18			**14 CC c**					
Southeast U.S. Region	**3**		**3**	**3**				**5**	**24**	**16 S**	**I**	**PR**	**>75 us-can (50 gl)**		
SECP (BCR 27)	**3**		**3**	**3**				**5**	**24**	**16 S**	**I**	**PR**			
SACP	*3*		*3*	*3*				*5*	*24*	*16 S*	*I*	*PR*			
EGCP	*3*		*3*	*2*				*3*	*21*						
PENFL (BCR 31)	**3**		**3**	**3**				**4**	**23**	**15**	**I**	**PR**			
CENFL	*3*		*3*	*3*				*4*	*23*	*15*	*I*	*PR*			
STFL	*3*		*3*	*3*				*3*	*22*						
GCP (BCR 37)	**3**		**3**	**2**				**2**	**20**						
LA	*3*		*3*	*2*				*2*	*20*						
TX/Tam.	*3*		*3*	*2*				*1*							
Greater Shearwater	**3**	**3**	**3**	**3**	**5**	**2**	19			**14 CC c**					
Southeast U.S. Region	**3**		**3**	**3**				**5**	**24**	**16 S**	**I**	**PR**	**>75 us-can (50 gl)**		
SECP (BCR 27)	**3**		**3**	**3**				**5**	**24**	**16 S**	**I**	**PR**			
SACP	*3*		*3*	*3*				*5*	*24*	***16 S***	*I*	*PR*			
EGCP	*3*		*3*	*3*				*2*	*21*						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
PENFL (BCR 31)	3		3	3				3	22	17	I	PR			
CENFL	*3*		*3*	*3*				*3*	*22*	*17*	*I*	*PR*			
STFL	*3*		*3*	*3*				*2*	*21*						
GCP (BCR 37)	3		3	3				2	21						
LA	*3*		*3*	*3*				*2*	*21*						
TX/Tam.	*3*		*3*	*3*				*2*	*21*						
Sooty Shearwater	4	3	2	3	4	1	17								
Southeast U.S. Region	4		2	3				4	21	15 RC	I	MA	<33 us-can (10 gl)		
SECP (BCR 27)	4		2	3				4	21	15 RC	I	MA			
SACP	*4*		*2*	*3*				*4*	*21*	*15 RC*	*I*	*MA*			
PENFL (BCR 31)	4		2	3				3	20	14 RC	I	MA			
CENFL	*4*		*2*	*3*				*3*	*20*	*14 RC*	*I*	*MA*			
STFL	*4*		*2*	*3*				*3*	*20*	*14 RC*	*I*	*MA*			
Manx Shearwater	3	4	3	2	5	2	19			15 CC c					
Southeast U.S. Region	3		3	2				3	22	14	I	PR	<25 us-can (1 gl)		
SECP (BCR 27)	3		3	2				3	22	14	I	PR	100 regional		
SACP	*3*		*3*	*2*				*3*	*22*	*14*	*I*	*PR*	*(100)*		
Audubon's Shearwater	5	4	4	3	3	3	22			16 CC b					
West Indies Subspecies	5	5	4	4	4	4							<20 global		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Southeast U.S. Region	**5**		**4**	**4**				**5**	**30/27**	**23/21 RC S**	**I**	**IM**	**100 us-can (20 gl)**		
SECP (BCR 27)	**5**		**4**	**4**				**5**	**30/27**	**23/21 RC, S**	**I**	**IM**			
SACP	*5*		*4*	*4*				*5*	*30/27*	*23/21 RC, S*	*I*	*IM*			
EGCP	*5*		*4*	*4*				*2*	*27/24*	*20/18 RC*	*I*	*IM*			
PENFL (BCR 31)	**5**		**4**	**4**				**3**	**28/25**	**21/19 RC**	**I**	**IM**			
CENFL	*5*		*4*	*4*				*3*	*28/25*	*21/19 RC*	*I*	*IM*			
STFL	*5*		*4*	*4*				*3*	*28/25*	*21/19 RC*	*I*	*IM*			
GCP (BCR 37)	**5**		**4**	**4**				**3**	**28/25**	**21/19 RC**	**I**	**IM**			
LA	*5*		*4*	*4*				*3*	*28/25*	*21/19 RC*	*I*	*IM*			
TX /Tam.	*5*		*4*	*4*				*3*	*28/25*	*21/19 RC*	*I*	*IM*			
Wilson's Storm-Petrel	**3**	**2**	**2**	**2**	**2**	**1**	12								
Southeast U.S. Region	**3**		**2**	**2**				**5**	**17**						
SECP (BCR 27)	**3**		**2**	**2**				**5**	**17**						
SACP	*3*		*2*	*2*				*5*	*17*						
EGCP	*3*		*2*	*2*				*2*	*14*						
PENFL (BCR 31)	**3**		**2**	**2**				**3**	**15**						
CENFL	*3*		*2*	*2*				*3*	*15*						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
STFL	*3*		*2*	*2*				*2*	*14*						
GCP (BCR 37)	**3**		**2**	**2**				**2**	**14**						
LA	*3*		*2*	*2*				*2*	*14*						
TX /Tam.	*3*		*2*	*2*				*2*	*14*						
Leach's Storm-Petrel	**2**	**2**	**3**	**2**	**2**	**2**	13								
Southeast U.S. Region	**2**		**3**	**2**				**2**	**15**						
SECP (BCR 27)	**2**		**3**	**2**				**2**	**15**						
SACP	*2*		*3*	*2*				*2*	*15*						
Band-rumped Storm-Petrel	**5**	**4**	**3**	**2**	**5**	**2**	21			**17 CC b**					
Southeast U.S. Region	**5**		**3**	**2**				**3**	**24**	**16**	**I**	**PR**	**>90 us-can (10 gl)**		
SECP (BCR 27)	**5**		**3**	**2**				**3**	**24**	**16**	**I**	**PR**			
SACP	*5*		*3*	*2*				*3*	*24*	*16*	*I*	*PR*			
EGCP	*5*		*3*	*2*				*2*	*23*	*15*	*I*	*PR*			
PENFL (BCR 31)	**5**		**3**	**2**				**2**	**23**	**15**	**I**	**PR**			
CENFL	*5*		*3*	*2*				*2*	*23*	*15*	*I*	*PR*			
STFL	*5*		*3*	*2*				*2*	*23*	*15*	*I*	*PR*			
GCP (BCR 37)	**5**		**3**	**3**				**3**	**25**	**17 RC**	**I**	**MA**			
LA	*5*		*3*	*3*				*3*	*25*	**17 RC**	*I*	*MA*			
TX/Tam.	*5*		*3*	*3*				*1*							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
White-tailed Tropicbird	**4**	**4**	**4**	**3**	**3**	**2**	20			**15 CC b**					
Southeast U.S. Region	**4**		**4**	**3**				**1**							
SECP (BCR 27)	**4**		**4**	**3**				**1**							
SACP	*4*		*4*	*3*				*1*							
PENFL (BCR 31)	**4**		**4**	**3**				**1**							
CENFL	*4*		*4*	*3*				*1*							
STFL	*4*		*4*	*3*				*1*							
Red-billed Tropicbird	**4**	**5**	**4**	**3**	**4**	**3**	23			**17 CC a**					
Southeast U.S. Region	**4**		**4**	**3**				**1**							
SECP (BCR 27)	**4**		**4**	**3**				**1**							
SACP	*4*		*4*	*3*				*1*							
EGCP	*4*		*4*	*3*				*1*							
PENFL (BCR 31)	**4**		**4**	**3**				**1**							
CENFL	*4*		*4*	*3*				*1*							
STFL	*4*		*4*	*3*				*1*							
GCP (BCR 37)	**4**		**4**	**3**				**1**							
LA	*4*		*4*	*3*				*1*							
TX/Tam.	*4*		*4*	*3*				*1*							
Masked Booby	**4**	**4**	**4**	**3**	**3**	**2**	20			**15 CC c**					

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
Southeast U.S. Region	**4**		**4**	**3**				**2**	**22**	**15 RC**	**I**	**MA**			
SECP (BCR 27)	**4**		**4**	**3**				**1**							
SACP	*4*		*4*	*3*				*1*							
EGCP	*4*		*4*	*3*				*1*							
PENFL (BCR 31)	**4**		**4**	**3**				**2**	**22**	**15 RC**	**I**	**MA**			
CENFL	*4*		*4*	*3*				*2*	*22*	*15 RC*	*I*	*MA*			
STFL	*4*		*4*	*3*				*2*	*22*	*15 RC*	*I*	*MA*			
GCP (BCR 37)	**4**		**4**	**3**				**2**	**22**	**15 RC**	**I**	**MA**			
LA	*4*		*4*	*3*				*2*	*22*	*15 RC*	*I*	*MA*			
TX/Tam.	*4*		*4*	*3*				*1*							
Brown Booby	**4**	**3**	**4**	**3**	**3**	**2**	19			**14 CC b**					
Southeast U.S. Region	**4**		**4**	**3**				**2**	**21**	**14 RC**	**I**	**MA**			
SECP (BCR 27)	**4**		**4**	**3**				**1**							
SACP	*4*		*4*	*3*				*1*							
EGCP	*4*		*4*	*3*				*1*							
PENFL (BCR 31)	**4**		**4**	**3**				**2**	**21**	**14 RC**	**I**	**MA**			
CENFL	*4*		*4*	*3*				*1*							
STFL	*4*		*4*	*3*				*2*	*21*	*14 RC*	*I*	MA			
GCP (BCR 37)	**4**		**4**	**3**				**1**							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
LA	*4*		*4*	*3*				*1*							
TX/Tam.	*4*		*4*	*3*				*1*							
Red-footed Booby	**4**	**3**	**4**	**4**	**3**	**2**	20			**14 CC b**					
Southeast U.S. Region	**4**		**4**	**4**				**1**							
PENFL (BCR 31)	**4**		**4**	**4**				**1**							
STFL	*4*		*4*	*4*				*1*							
Northern Gannet	**1**	**4**	**3**	**3**	**4**	**2**	17								
Southeast U.S. Region	**1**		**3**	**4**				**5**	**23**	**16 RC S**	**I**	**MA**	**>50 us-can (33 gl)**		
SECP (BCR 27)	**1**		**3**	**4**				**5**	**23**	**16 RC**	**I**	**MA**			
SACP	*1*		*3*	*4*				*5*	*23*	*16 RC*	*I*	*MA*			
EGCP	*1*		*3*	*4*				*3*	*21*	*14 RC*	*I*	*MA*			
PENFL (BCR 31)	**1**		**3**	**4**				**4**	**22**	**15 RC**	**I**	**MA**			
CENFL	*1*		*3*	*4*				*4*	*22*	*15 RC*	*I*	*MA*			
STFL	*1*		*3*	*4*				*3*	*21*	*14 RC*	*I*	*MA*			
GCP (BCR 37)	**1**		**3**	**4**				**3**	**21**	**14 RC**	**I**	**MA**			
LA	*1*		*3*	*4*				*3*	*21*	*13 RC*	*I*	*MA*			
TX /Tam.	*1*		*3*	*4*				*1*							
American White Pelican	**2**	**4**	**3**	**3**	**3**	**2**	17								
Southeast U.S. Region	**2**		**3**	**4**				**5**	**23**	**17 RC, S**	**I**	**MA**	**>67 us-can (67 gl)**		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
EP (BCR 20)	**2**		**3**	**3**				**3**	**20**		**IV**	**PR**			
OP (BCR 21)	**2**		**3**	**3**				**3**	**20**		**IV**	**PR**			
WGCP (BCR 25)	**2**		**3**	**3**				**4**	**21**		**IV**	**PR**			
MAV (BCR 26)	**2**		**3**	**4**				**5**	**23**	**17 RC, S**	**I**	**MA/PCL**			
SECP (BCR 27)	**2**		**3**	**4**				**3**	**21**	**15 RC**	**I**	**MA/PCL**			
SACP	*2*		*3*	*3*				*2*	*19*		*IV*	*PR*			
EGCP	*2*		*3*	*4*				*3*	*21*	*15 RC*	*I*	*MA/PCL*			
APPS (BCR 28)	**2**		**3**	**3**				**1**							
PIED (BCR 29)	**2**		**3**	**3**				**1**							
PENFL (BCR 31)	**2**		**3**	**3**				**5**	**21**	**16 RC, S,**	**II**	**PR**			
CENFL	*2*		*3*	*3*				*5*	*21*	*16 RC, S*	*II*	*PR*			
STFL	*2*		*3*	*3*				*4*	*21*	*15 RC*	*II*	*PR*			
TAMB (BCR 36)	**2**		**3**	**3**				**3**	**20**						
GCP (BCR 37)	**2**		**3**	**3**				**5**	**22**	**16 RC, S**	**II**	**PR**			
LA	*2*		*3*	*3*				*5*	*22*	*16 RC, S*	*II*	*PR*			
TX	*2*		*3*	*3*				*5*	*22*	*16 RC, S*	*II*	*PR*			
Tam.	*3*		*3*	*3*				*3*	*21*	*15 RC, S*	*II*	*PR*			
Double-crested Cormorant	**1**	**3**	**2**	**2**	**2**	**2**	12								
Southeast U.S. Region	**1**		**2**	**3**				**5**	**18**	**14 S**	**II**	**PC**	**>50 us-can (50 gl)**		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
EP (BCR 20)	**1**		**2**	**3**				**3**	**16**						
OP (BCR 21)	**1**		**2**	**3**				**4**	**17**						
WGCP (BCR 25)	**1**		**2**	**3**				**4**	**17**		**IV**	**PC**			
MAV (BCR 26)	**1**		**2**	**3**				**5**	**18**	**14 S**	**II**	**PR/PC**			
SECP (BCR 27)	**1**		**2**	**2**				**5**	**17**		**IV**	**PC**			
SACP	*1*		*2*	*2*				*5*	*17*		*IV*	*PC*			
EGCP	*1*		*2*	*2*				*4*	*16*		*IV*	*PC*			
APPS (BCR 28)	**1**		**2**	**2**				**2**	**14**						
PIED (BCR 29)	**1**		**2**	**2**				**3**	**15**						
PENFL (BCR 31)	**1**		**2**	**2**				**5**	**17**		**IV**	**PC**			
CENFL	*1*		*2*	*2*				*5*	*17*		*IV*	*PC*			
STFL	*1*		*2*	*2*				*5*	*17*		*IV*	*PC*			
TAMB (BCR 36)	**1**		**2**	**2**				**4**	**16**						
GCP (BCR 37)	**1**		**2**	**2**				**5**	**17**		**IV**	**PC**			
LA	*1*		*2*	*2*				*5*	*17*		***IV***	*PC*			
TX	*1*		*2*	*2*				*4*	*16*			*PC*			
Tam.	*1*		*2*	*2*				*3*	*15*						
Great Cormorant	**3**	**3**	**2**	**2**	**2**	**1**	13								
Southeast U.S. Region	**3**		**2**	**2**				**1**							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SECP (BCR 27)	**3**		**2**	**2**				**1**							
SACP	*3*		*2*	*2*				*1*							
PENFL (BCR 31)	**3**		**2**	**2**				**1**							
CENFL	*3*		*2*	*2*				*1*							
Magnificent Frigatebird	**4**	**4**	**4**	**3**	**4**	**3**	22			**16 CC c**					
Southeast U.S. Region	**4**		**4**	**3**				**4**	**26**	**18 RC**	**I**	**MA**	**>90 us-can (10 gl)**		
SECP (BCR 27)	**4**		**4**	**3**				**2**	**24**	**16 RC**	**I**	**MA**			
SACP	*4*		*4*	*3*				*2*	*24*	*16 RC*	*I*	*MA*			
EGCP	*4*		*4*	*3*				*2*	*24*	*16 RC*	*I*	*MA*			
PENFL (BCR 31)	**4**		**4**	**3**				**3**	**25**	**17 RC**	**I**	**MA**			
CENFL	*4*		*4*	*3*				*3*	*25*	*17 RC*	*I*	*MA*			
STFL	*4*		*4*	*3*				*4*	*26*	*18 RC*	*I*	*MA*			
GCP (BCR 37)	**4**		**4**	**3**				**2**	**24**	**16 RC**	**I**	**MA**			
LA	*4*		*4*	*3*				*2*	*24*	***16 RC***	*I*	*MA*			
TX	*4*		*4*	*3*				*2*	*24*	*16 RC*	*I*	*MA*			
Tam.	*4*		*4*	*3*				*2*	*24*	*16 RC*	*I*	*MA*			
American Bittern	**4**	**3**	**3**	**3**	**1**	**2**	16								
Southeast U.S. Region	**4**		**3**	**4**				**5**	**22**	**18 RC, S**	**I**	**MA**	**>33 us-can (33 gl)**		
EP (BCR 20)	**4**		**3**	**3**				**2**	**18**	**14 RC**	**I**	**MA**			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
OP (BCR 21)	4		3	3				2	18	14 RC	I	MA			
WGCP (BCR 25)	4		3	3				3	19	15 RC	I	MA			
MAV (BCR 26)	4		3	4				5	22	18 RC, S	I	MA			
SECP (BCR 27)	4		3	4				4	21	17 RC	I	MA			
SACP	*4*		*3*	*4*				*4*	*21*	*17 RC*	*I*	*MA*			
EGCP	*4*		*3*	*4*				*3*	*20*	*16 RC*	*I*	*MA*			
APPS (BCR 28)	4		3	4				2	19	15 RC	I	MA			
PIED (BCR 29)	4		3	4				2	19	15 RC	I	MA			
PENFL (BCR 31)	4		3	4				5	22	18 RC, S	I	MA			
CENFL	*4*		*3*	*4*				**5**	*22*	*18 RC, S*	*I*	*MA*			
STFL	*4*		*3*	*4*				*5*	*22*	*18 RC, S*	*I*	*MA*			
TAMB (BCR 36)	4		3	3				3	19	15 RC	I	MA			
GCP (BCR 37)	4		3	4				5	22	18 RC, S	II a	MA			
LA	*4*		*3*	*4*				*5*	*22*	*18 RC, S*	*II a*	*MA*			
TX	*4*		*3*	*4*				*4*	*21*	17 RC	*II a*	*MA*			
Tam.	*4*		*3*	*4*				*3*	*20*	*16 RC*	*II a*	*MA*			
Wood Stork	4	4	4	3	1	1	17								
Southeast U.S. Region	4		4	4				5	23	18 RC, S	I	MA	>80 us-can (33 gl)		
EP (BCR 20)	4		4	3				2	19	14 RC	I	MA			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
OP (BCR 21)	**4**		**4**	**3**				**2**	**19**	**14 RC**	**I**	**MA**			
WGCP (BCR 25)	**4**		**4**	**3**				**4**	**21**	**16 RC**	**I**	**MA**			
MAV (BCR 26)	**4**		**4**	**4**				**4**	**22**	**16 RC**	**I**	**MA**			
SECP (BCR 27)	**4**		**4**	**4**				**3**	**21**	**15 RC**	**I**	**MA**			
EGCP	*4*		*4*	*4*				*3*	*21*	*15 RC*	*I*	*MA*			
TAMB (BCR 36)	**4**		**4**	**3**				**3**	**20**	**15 RC**	**I**	**MA**			
GCP (BCR 37)	**4**		**4**	**3**				**5**	**22**	**17 RC, S**	**I**	**MA**			
LA	*4*		*4*	*3*				*5*	*22*	*17 RC, S*	*I*	*MA*			
TX	*4*		*4*	*3*				*5*	*22*	*17 RC, S*	*I*	*MA*			
Tam.	*3*		*4*	*3*				*3*	*19*	*14 RC, S*	*I*	*MA*			
Greater Flamingo	**2**	**3**	**4**	**3**	**3**	**3**	18						**0 global (at present)**		
Southeast U.S. Region	**5**		**5**	**3**				**2**	**24**	**16 RC**	**I**	**MA**	**100 us-can**		
PENFL (BCR 31)	**5**		**5**	**3**				**2**	**24**	**16 RC**	**I**	**MA**	**100 reg.**		
STFL	*5*		*5*	3				*2*	*24*	*16 RC*		*MA*	*(100)*		
Yellow Rail	**4**	**5**	**4**	**4**	**3**	**5**	25			**18 CC a**					
Southeast U.S. Region	**4**		**4**	**4**				**5**	**30**	**23 RC, S**	**I**	**MA**	**100 us-can (100 gl)**		

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
EP (BCR 20)	**4**		**4**	**4**				**1**							
OP (BCR 21)	**4**		**4**	**4**				**2**	**27**	**20 RC**	**I**	**MA**			
WGCP (BCR 25)	**4**		**4**	**4**				**2**	**27**	**20 RC**	**I**	**MA**	**~2 gl**		
MAV (BCR 26)	**4**		**4**	**4**				**2**	**27**	**20 RC**	**I**	**MA**	**~3 gl**		
SECP (BCR 27)	**4**		**4**	**4**				**4**	**29**	**22 RC**	**I**	**MA**	**~20 gl**		
SACP	*4*		*4*	*4*				*4*	*29*	*22 RC*	*I*	*MA*			
EGCP	*4*		*4*	*4*				*4*	*29*	*22 RC*	*I*	*MA*			
APPS (BCR 28)	**4**		**4**	**4**				1							
PIED (BCR 29)	**4**		**4**	**4**				1							
PENFL (BCR 31)	**4**		**4**	**4**				**4**	**29**	**22 RC**	**I**	**MA**	**~20 gl**		
CENFL	*4*		*4*	*4*				*4*	*29*	*22 RC*	*I*	*MA*			
STFL	*4*		*4*	*4*				*4*	*29*	*22 RC*	*I*	*MA*			
GCP (BCR 37)	**4**		**4**	**4**				**5**	**30**	**23 RC, S**	**I**	**MA**	**~55 gl**		
LA	*4*		*4*	*4*				*5*	*30*	*23 RC, S*	*I*	*MA*			
TX	*4*		*4*	*4*				*5*	*30*	*23 RC, S*	*I*	*MA*			
Black Rail	**5**	**4**	**4**	**4**	**5**	**5**	27			**17 CC a**					
Southeast U.S. Region	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**	**>90 us-can (90 gl)**		
EP (BCR 20)	**5**		**4**	**4**				**1**							
OP (BCR 21)	**5**		**4**	**4**				**2**	**29**	**20 RC**	**I**	**IM**			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
WGCP (BCR 25)	**5**		**4**	**4**				**2**	**29**	**20 RC**	**I**	**IM**			
MAV (BCR 26)	**5**		**4**	**4**				**2**	**29**	**20 RC**	**I**	**IM**			
SECP (BCR 27)	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**			
SACP	*5*		*4*	*4*				*5*	*32*	*23 RC, S*	*I*	*IM*			
EGCP	*5*		*4*	*4*				*4*	*31*	*22 RC*	*I*	*IM*			
PENFL (BCR 31)	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**			
CENFL	*5*		*4*	*4*				*5*	*32*	*23 RC, S*	*I*	*IM*			
STFL	*5*		*4*	*4*				*3*	30	*21 RC, S*	*I*	*IM*			
GCP (BCR 37)	**5**		**4**	**4**				**5**	**32**	**23 RC, S**	**I**	**IM**			
LA	*5*		*4*	*4*				*5*	*32*	*23 RC, S*	*I*	*IM*			
TX	*5*		*4*	*4*				*5*	*32*	*23 RC, S*	*I*	*IM*			
Virginia Rail	**1**	**4**	**3**	**2**	**1**	**2**	13								
Southeast U.S. Region	**1**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**	**>33 us-can (33 gl)**		
EP (BCR 20)	**1**		**3**	**2**				**3**	**16**		**IV**	**PR**			
OP (BCR 21)	**1**		**3**	**2**				**3**	**16**		**IV**	**PR**			
WGCP (BCR 25)	**1**		**3**	**3**				**3**	**17**		**IV**	**PR**			
MAV (BCR 26)	**1**		**3**	**3**				**4**	**18**		**IV**	**PR**			
SECP (BCR 27)	**1**		**3**	**3**				**4**	**18**		**IV**	**PR**			
SACP	*1*		*3*	*3*				*4*	*18*		*IV*	*PR*			

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
EGCP	*1*		*3*	*3*				*4*	*18*		*IV*	*PR*			
APPS (BCR 28)	**1**		**3**	**2**				**3**	**16**		**IV**	**PR**			
PIED (BCR 29)	**1**		**3**	**2**				**3**	**16**		**IV**	**PR**			
PENFL (BCR 31)	**1**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**			
CENFL	*1*		*3*	*3*				*5*	*19*		*II*	*PR*			
STFL	*1*		*3*	*3*				*5*	*19*		*II*	*PR*			
TAMB (BCR 36)	**1**		**3**	**3**				**3**	**17**		**IV**	**PR**			
GCP (BCR 37)	**1**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**			
LA	*1*		*3*	*3*				*5*	*19*		*II*	*PR*			
TX	*1*		*3*	*3*				*5*	*19*		*II*	*PR*			
Tam.	*1*		*3*	*3*				*2*	*16*		*IV*	*PR*			
Sora	**3**	**3**	**3**	**2**	**1**	**1**	12								
Southeast U.S. Region	**3**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**	**>33 us-can (33 gl)**		
EP (BCR 20)	**3**		**3**	**2**				**3**	**16**		**IV**	**PR**			
OP (BCR 21)	**3**		**3**	**2**				**3**	**16**		**IV**	**PR**			
WGCP (BCR 25)	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**			
MAV (BCR 26)	**3**		**3**	**3**				**4**	**18**		**IV**	**PR**			
SECP (BCR 27)	**3**		**3**	**3**				**4**	**18**		**IV**	**PR**			
SACP	*3*		*3*	*3*				*4*	*18*		*IV*	*PR*			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
EGCP	*3*		*3*	*3*				*3*	*17*		*IV*	*PR*			
APPS (BCR 28)	**3**		**3**	**2**				**2**	**15**		**IV**	**PR**			
PIED (BCR 29)	**3**		**3**	**2**				**2**	**15**		**IV**	**PR**			
PENFL (BCR 31)	**3**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**			
CENFL	*3*		*3*	*3*				*5*	*19*	*15 S*	*II*	*PR*			
STFL	*3*		*3*	*3*				*5*	*19*	*15 S*	*II*	*PR*			
TAMB (BCR 36)	**3**		**3**	**3**				**3**	**17**		**IV**	**PR**			
GCP (BCR 37)	**3**		**3**	**3**				**5**	**18**	**15 S**	**II**	**PR**			
LA	*3*		*3*	*3*				*5*	*18*	*15 S*	*II*	*PR*			
TX	*3*		*3*	*3*				*5*	*18*	*15 S*	*II*	*PR*			
Tam.	*3*		*3*	*3*				*4*	*18*		*IV*	*PR*			
American Coot	**4**	**3**	**3**	**3**	**1**	**1**	15								
Southeast U.S. Region	**4**	**3**	**3**	**3**	**1**	**1**		5	**20**	**16 RC**	**I**	**MA**	**<33 us-can (25 gl)**		
EP (BCR 20)	**4**		**3**	**3**				**3**	**18**	**14 RC**	**I**	**MA**			
OP (BCR 21)	**4**		**3**	**3**				**3**	**18**	**14 RC**	**I**	**MA**			
WGCP (BCR 25)	**4**		**3**	**3**				**4**	**19**	**15 RC**	**I**	**MA**			
MAV (BCR 26)	**4**		**3**	**3**				**5**	**20**	**16 RC**	**I**	**MA**			
SECP (BCR 27)	**4**		**3**	**3**				**4**	**19**	**15 RC**	**I**	**MA**			
SACP	*4*		*3*	*3*				*4*	*19*	*15 RC*	*I*	*MA*			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
EGCP	*4*		*3*	*3*				*4*	*19*	*15 RC*	*I*	*MA*			
APPS (BCR 28)	**4**		**3**	**3**				**3**	**18**	**14 RC**	**I**	**MA**			
PIED (BCR 29)	**4**		**3**	**3**				**3**	**18**	**14 RC**	**I**	**MA**			
PENFL (BCR 31)	**4**		**3**	**3**				**5**	**20**	**16 RC, S**	**I**	**MA**			
CENFL	*4*		*3*	*3*				*5*	*20*	**16 RC**	*I*	*MA*			
STFL	*4*		*3*	*3*				*5*	*20*	**16 RC**	*I*	*MA*			
TAMB (BCR 36)	**4**		**3**	**3**				**3**	**18**	**14 RC**	**I**	**MA**			
GCP (BCR 37)	**4**		**3**	**3**				**5**	**20**	**16 RC, S**	**I**	**MA**			
LA	*4*		*3*	*3*				*5*	*20*	*16 RC*	*I*	*MA*			
TX	*4*		*3*	*3*				*5*	*20*	*16 RC*	*I*	*MA*			
Tam.	*4*		*3*	*3*				*4*	*19*	*15 RC*	*I*	*MA*			
Sandhill Crane	**1**	**3**	**3**	**3**	**1**	**3**	14								
Southeast U.S. Region	**1**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**	**>33 us-can (33 gl)**		
(Eastern population of Greater Sandhill Crane, breeding Ontario, MN, WI, MI)															
WGCP (BCR 25)	**1**		**3**	**3**				**2**	**16**		**IV**	**PR**			
MAV (BCR 26)	**1**		**3**	**3**				**2**	**16**		**IV**	**PR**			
SECP (BCR 27)	**1**		**3**	**3**				**4**	**18**	**14 S**	**II**	**PR**			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SACP	*1*		*3*	*3*				*4*	*18*	*14 S*	*II*	*PR*			
EGCP	*1*		*3*	*3*				1							
APPS (BCR 28)	**1**		**3**	**3**				**4**	**18**	**14 S**	**II**	**PR**			
PIED (BCR 29)	**1**		**3**	**3**				**4**	**18**	**14 S**	**II**	**PR**			
PENFL (BCR 31)	**1**		**3**	**3**				**4**	**18**	**14 S**	**II**	**PR**			
CENFL	*1*		*3*	*3*				*4*	*18*	**14 S**	*II*	*PR*			
STFL	*1*		*3*	*3*				*3*	*17*		*IV*	*PR*			
(Gulf Coast subpopulation of Mid-continent populations, breeding Prairie Provinces and NWT)															
EP (BCR 20)	**1**		**3**	**3**				**3**	**17**						
OP (BCR 21)	**1**		**3**	**3**				**4**	**18**		**IV**	**PR**			
TAMB (BCR 36)	**1**		**3**	**3**				**3**	**17**		**IV**	**PR**			
GCP (BCR 37)	**1**		**3**	**3**				**5**	**19**	**15 S**	**II**	**PR**			
LA	*1*		*3*	*3*				*2*	*16*		*IV*	*PR*			
TX	*1*		*3*	*3*				*5*	*19*	*15 S*	*II*	*PR*			
Tam.	*1*		*3*	*3*				*5*	*19*	*15 S*	*II*	*PR*			
Whooping Crane	**5**	**5**	**5**	**5**	**5**	**5**	30			**20 CC a**					
Southeast U.S. Region	**5**		**5**	**5**				**5**	**35**	**25 RC S**	**I**	**CR**	**100 us-can (100 gl)**		

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
PENFL (BCR 31)	**1**		**5**	**5**				**2**	**28**	**17 RC**	**I**	**CR**		**2**	**4**
CENFL (Reintroduced migratory flock from Wisconsin)	*1*		*5*	*5*				*2*	*28*	*17 RC*	*I*	*CR*			
GCP (BCR 37)	**5**		**5**	**5**				**5**	**35**	**25 RC S**	**I**	**CR**	**100 regional**		
LA	*5*		*5*	*5*				*2*	*32*	*22 RC*	*I*	*CR*	*(extirpated)*		
TX	*5*		*5*	*5*				*5*	*35*	*22 RC S*	*I*	*CR*	*(100)*		
Great Skua	**3**	**4**	**2**	**2**	**5**	**2**	18			**14 CC c**					
Southeast U.S. Region	**3**		**2**	**2**				**1**							
SECP (BCR 27)	**3**		**2**	**2**				**1**							
SACP	*3*		*2*	*2*				*1*							
South Polar Skua	**3**	**4**	**2**	**2**	**2**	**1**	14								
Southeast U.S. Region	**3**		**2**	**2**				**1**							
SECP (BCR 27)	**3**		**2**	**2**				**1**							
SACP	*3*		*2*	*2*				*1*							
PENFL (BCR 31)	**3**		**2**	**2**				**1**							
CENFL	*3*		*2*	*2*				*1*							
Pomarine Jaeger	**3**	**4**	**2**	**2**	**2**	**1**	14								
Southeast U.S. Region	**3**		**2**	**2**				**4**	**18**						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
SECP (BCR 27)	**3**		**2**	**2**				**4**	**18**						
SACP	*3*		*2*	*2*				*4*	*18*						
EGCP	*3*		*2*	*2*				*3*	*17*						
PENFL (BCR 31)	**3**		**2**	**2**				**4**	**18**						
CENFL	*3*		*2*	*2*				*4*	*18*						
STFL	*3*		*2*	*2*				*4*	*18*						
GCP (BCR 37)	**3**		**2**	**2**				**3**	**17**						
LA	*3*		*2*	*2*				*3*	*17*						
TX /Tam.	*3*		*2*	*2*				*3*	*17*						
Parasitic Jaeger	**3**	**4**	**2**	**2**	**1**	**1**	13								
Southeast U.S. Region	**3**		**2**	**2**				**4**	**17**						
SECP (BCR 27)	**3**		**2**	**2**				**4**	**17**						
SACP	*3*		*2*	*2*				*4*	*17*						
EGCP	*3*		*2*	*2*				*3*	*16*						
PENFL (BCR 31)	**3**		**2**	**2**				**4**	**17**						
CENFL	*3*		*2*	*2*				*4*	*17*						
STFL	*3*		*2*	*2*				*4*	*17*						
GCP (BCR 37)	**3**		**2**	**2**				**3**	**16**						
LA	*3*		*2*	*2*				*3*	*16*						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
TX/Tam.	*3*		*2*	*2*				*3*	*16*						
Long-tailed Jaeger	**3**	**4**	**2**	**2**	**1**	**1**	13								
Southeast U.S. Region	**3**		**2**	**2**				**1**							
SECP (BCR 27)	**3**		**2**	**2**				**1**							
SACP								1							
Franklin's Gull	**2**	**3**	**3**	**3**	**3**	**2**	16								
Southeast U.S. Region	**2**		**3**	**3**				**5**	**21**	**15 S**	**II**	**PR**	**>75 us-can (75 gl)**		
EP (BCR 20)	**2**		**3**	**3**				**3**	**19**						
OP (BCR 21)	**2**		**3**	**3**				**5**	**21**	**15 S**	**II**	**PR**			
WGCP (BCR 25)	**2**		**3**	**3**				**3**	**19**						
MAV (BCR 26)	**2**		**3**	**3**				**2**	**18**						
SECP (BCR 27)	**2**		**3**	**3**				**1**							
SACP	*2*		*3*	*3*				*1*							
EGCP	*2*		*3*	*3*				*1*							
PENFL (BCR 31)	**2**		**3**	**3**				**1**							
CENFL	*2*		*3*	*3*				*1*							
STFL	*2*		*3*	*3*				*1*							
TAMB (BCR 36)	**2**		**3**	**3**				**3**	**19**						
GCP (BCR 37)	**2**		**3**	**3**				**5**	**21**	**15 S**	**II**	**PR**			

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
LA	*2*		*3*	*3*				*5*	*21*	*15 S*	*II*	*PR*			
TX	*2*		*3*	*3*				*5*	*21*	*15 S*	*II*	*PR*			
Tam.	*2*		*3*	*3*				*5*	*21*	*15 S*	*II*	*PR*			
Little Gull	**4**	**4**	**3**	**2**	**2**	**2**	17								
Southeast U.S. Region	**4**		**3**	**2**				**1**							
SECP (BCR 27)	**4**		**3**	**2**				**1**							
SACP	*4*		*3*	*2*				*1*							
PENFL (BCR 31)	**4**		**3**	**2**				**1**							
CENFL	*4*		*3*	*2*				*1*							
Black-headed Gull	**3**	**2**	**2**	**2**	**1**	**1**	11								
Southeast U.S. Region	**3**		**2**	**2**				**1**							
SECP (BCR 27)	**3**		**2**	**2**				**1**							
SACP	*3*		*2*	*2*				*1*							
PENFL (BCR 31)	**3**		**2**	**2**				**1**							
CENFL	*3*		*2*	*2*				*1*							
Bonaparte's Gull	**3**	**4**	**2**	**2**	**1**	**2**	14								
Southeast U.S. Region	**3**		**2**	**2**				**5**	**19**	**16 S**	**II**	**PR**	**>33 us-can (33 gl)**		
EP (BCR 20)	**3**		**2**	**2**				**3**	**17**						
OP (BCR 21)	**3**		**2**	**2**				**3**	**17**						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
WGCP (BCR 25)	**3**		**2**	**2**				**3**	**17**						
MAV (BCR 26)	**3**		**2**	**2**				**3**	**17**						
SECP (BCR 27)	**3**		**2**	**2**				**5**	**19**	**16 S**	**II**	**PR**			
SACP	*3*		*2*	*2*				*5*	*19*	*16 S*	*II*	*PR*			
EGCP	*3*		*2*	*2*				*4*	*18*						
APPS (BCR 28)	**3**		**2**	**2**				**2**	**16**						
PIED (BCR 29)	**3**		**2**	**2**				**3**	**17**						
PENFL (BCR 31)	**3**		**2**	**2**				**5**	**19**	**16 S**	**II**	**PR**			
CENFL	*3*		*2*	*2*				*5*	*19*	*16 S*	*II*	*PR*			
STFL	*3*		*2*	*2*				*4*	*18*						
TAMB (BCR 36)	**3**		**2**	**2**				**3**	**17**						
GCP (BCR 37)	**3**		**2**	**2**				**5**	**19**	**16 S**	**II**	**PR**			
LA	*3*		*2*	*2*				*5*	*19*	*16 S*	*II*	*PR*			
TX	*3*		*2*	*2*				*3*	*17*						
Tam.	*3*		*2*	*2*				*2*	*16*						
Ring-billed Gull	**1**	**3**	**1**	**1**	**1**	**1**	8								
Southeast U.S. Region	**1**		**1**	**1**				**5**	**13**						
EP (BCR 20)	**1**		**1**	**1**				**3**	**11**						
OP (BCR 21)	**1**		**1**	**1**				**5**	**13**						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
WGCP (BCR 25)	**1**		**1**	**1**				**4**	**12**						
MAV (BCR 26)	**1**		**1**	**1**				**4**	**12**						
SECP (BCR 27)	**1**		**1**	**1**				**5**	**13**						
SACP	*1*		*1*	*1*				*5*	*13*						
EGCP	*1*		*1*	*1*				*4*	*12*						
APPS (BCR 28)	**1**		**1**	**1**				**3**	**11**						
PIED (BCR 29)	**1**		**1**	**1**				**3**	**11**						
PENFL (BCR 31)	**1**		**1**	**1**				**5**	**13**						
CENFL	*1*		*1*	*1*				*5*	*13*						
STFL	*1*		*1*	*1*				*5*	*13*						
TAMB (BCR 36)	**1**		**1**	**1**				**3**	**11**						
GCP (BCR 37)	**1**		**1**	**1**				**5**	**13**						
LA	*1*		*1*	*1*				*5*	*13*						
TX	*1*		*1*	*1*				*5*	*13*						
Tam.	*1*		*1*	*1*				*2*	*10*						
Herring Gull	**5**	**3**	**2**	**1**	**1**	**1**	13								
Southeast U.S. Region	**5**		**2**	**1**				**4**	**17**						
EP (BCR 20)	**5**		**2**	**1**				**2**	**15**						
OP (BCR 21)	**5**		**2**	**1**				**2**	**15**						

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
WGCP (BCR 25)	**5**		**2**	**1**				**2**	**15**						
MAV (BCR 26)	**5**		**2**	**1**				**2**	**15**						
SECP (BCR 27)	**5**		**2**	**1**				**4**	**17**						
SACP	*5*		*2*	*1*				*4*	*17*						
EGCP	*5*		*2*	*1*				*3*	*16*						
APPS (BCR 28)	**5**		**2**	**1**				**2**	**15**						
PIED (BCR 29)	**5**		**2**	**1**				**2**	**15**						
PENFL (BCR 31)	**5**		**2**	**1**				**3**	**16**						
CENFL	*5*		*2*	*1*				*3*	*16*						
STFL	*5*		*2*	*1*				*3*	*16*						
TAMB (BCR 36)	**5**		**2**	**1**				**2**	**15**						
GCP (BCR 37)	**5**		**2**	**1**				**3**	**16**						
LA	*5*		*2*	*1*				*3*	*16*						
TX	*5*		*2*	*1*				*3*	*16*						
Tam.	*5*		*2*	*1*				*2*	*15*						
Iceland Gull	**3**	**4**	**2**	**1**	**4**	**2**	16								
Southeast U.S. Region	**3**		**2**	**1**				**1**							
SECP (BCR 27)	**3**		**2**	**1**				**1**							
SACP	*3*		*2*	*1*				*1*							

Species Globally **Region, BCR, Subarea**	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
Lesser Black-backed Gull	**1**	**4**	**2**	**1**	**3**	**1**	12								
Southeast U.S. Region	**1**		**2**	**1**				**1**							
EP (BCR 20)	**1**		**2**	**1**				**1**							
OP (BCR 21)	**1**		**2**	**1**				**1**							
WGCP (BCR 25)	**1**		**2**	**1**				**1**							
MAV (BCR 26)	**1**		**2**	**1**				**1**							
SECP (BCR 27)	**1**		**2**	**1**				**1**							
SACP	*1*		*2*	*1*				*1*							
EGCP	*1*		*2*	*1*				*1*							
APPS (BCR 28)	**1**		**2**	**1**				**1**							
PIED (BCR 29)	**1**		**2**	**1**				**1**							
PENFL (BCR 31)	**1**		**2**	**1**				**1**							
CENFL	*1*		*2*	*1*				*1*							
STFL	*1*		*2*	*1*				*1*							
TAMB (BCR 36)	**1**		**2**	**1**				**1**							
GCP (BCR 37)	**1**		**2**	**1**				**1**							
LA	*1*		*2*	*1*				*1*							
TX	*1*		*2*	*1*				*1*							
Tam.	*1*		*2*	*1*				*1*							

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
Glaucous Gull	**3**	**4**	**2**	**2**	**1**	**1**	13								
Southeast U.S. Region	**3**		**2**	**2**				**1**							
EP (BCR 20)	**3**		**2**	**2**				**1**							
OP (BCR 21)	**3**		**2**	**2**				**1**							
WGCP (BCR 25)	**3**		**2**	**2**				**1**							
MAV (BCR 26)	**3**		**2**	**2**				**1**							
SECP (BCR 27)	**3**		**2**	**2**				**1**							
SACP	*3*		*2*	*2*				*1*							
EGCP	*3*		*2*	*2*				*1*							
APPS (BCR 28)	**3**		**2**	**2**				**1**							
PIED (BCR 29)	**3**		**2**	**2**				**1**							
PENFL (BCR 31)	**3**		**2**	**2**				**1**							
CENFL	*3*		*2*	*2*				*1*							
GCP (BCR 37)	**3**		**2**	**2**				**1**							
LA	*3*		*2*	*2*				*1*							
TX	*3*		*2*	*2*				*1*							
Great Black-backed Gull	**4**	**4**	**2**	**1**	**3**	**2**	16								
Southeast U.S. Region	**4**		**2**	**1**				**3**	**19**						
EP (BCR 20)	**4**		**2**	**1**				**1**							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
OP (BCR 21)	**4**		**2**	**1**				**1**							
WGCP (BCR 25)	**4**		**2**	**1**				**1**							
MAV (BCR 26)	**4**		**2**	**1**				**1**							
SECP (BCR 27)	**4**		**2**	**1**				**3**	**19**						
SACP	*4*		*2*	*1*				*3*	*19*						
EGCP	*4*		*2*	*1*				*2*	*18*						
APPS (BCR 28)	**4**		**2**	**1**				**1**							
PIED (BCR 29)	**4**		**2**	**1**				**1**							
PENFL (BCR 31)	**4**		**2**	**1**				**2**	**18**						
CENFL	*4*		*2*	*1*				*2*	*18*						
GCP (BCR 37)	**4**		**2**	**1**				**1**							
LA	*4*		*2*	*1*				*1*							
TX	*4*		*2*	*1*				*1*							
Tam.	*4*		*2*	*1*				*1*							
Black-legged Kittiwake	**3**	**2**	**2**	**2**	**2**	**1**	12								
Southeast U.S. Region	**3**		**2**	**2**				**2**	**14**						
SECP (BCR 27)	**3**		**2**	**2**				**2**	**14**						
SACP	*3*		*2*	*2*				*2*	*14*						
PENFL (BCR 31)	**3**		**2**	**2**				**1**							

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
CENFL	*3*		*2*	*2*				*1*							
Caspian Tern	**1**	**4**	**3**	**2**	**2**	**2**	14								
Southeast U.S. Region	**1**		**3**	**2**				**3**	**17**						
EP (BCR 20)	**1**		**3**	**2**				**2**	**16**						
OP (BCR 21)	**1**		**3**	**2**				**3**	**16**						
WGCP (BCR 25)	**1**		**3**	**2**				**3**	**16**						
MAV (BCR 26)	**1**		**3**	**2**				**3**	**16**						
APPS (BCR 28)	**1**		**3**	**2**				**2**	**15**						
PIED (BCR 29)	**1**		**3**	**2**				**2**	**15**						
TAMB (BCR 36)	**1**		**3**	**2**				**2**	**15**						
Common Tern	**5**	**3**	**3**	**3**	**1**	**1**	16								
Southeast U.S. Region	**5**		**3**	**3**				**5**	**21**	**17 RC, S**	**I**	**MA**	**>66 us-can (20 gl)**		
EP (BCR 20)	**5**		**3**	**3**				**1**							
OP (BCR 21)	**5**		**3**	**3**				**2**	**18**	**14 RC**	**I**	**MA**			
WGCP (BCR 25)	**5**		**3**	**3**				**2**	**18**	**14 RC**	**I**	**MA**			
MAV (BCR 26)	**5**		**3**	**3**				**3**	**19**	**15 RC**	**I**	**MA**			
SECP (BCR 27)	**5**		**3**	**3**				**5**	**21**	**17 RC, S**	**I**	**MA**			
SACP	*5*		*3*	*3*				*5*	*21*	*17 RC, S*	*I*	*M A*			
EGCP	*5*		*3*	*3*				*4*	*20*	*16 RC*	*I*	*MA*			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
APPS (BCR 28)	**5**		**3**	**3**				**1**							
PIED (BCR 29)	**5**		**3**	**3**				**1**							
PENFL (BCR 31)	**5**		**3**	**3**				**5**	**21**	**17 RC, S**	**I**	**MA**			
CENFL	*5*		*3*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
STFL	*5*		*3*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
TAMB (BCR 36)	**5**		**3**	**3**				**2**	**18**	**14 RC**	**I**	**MA**			
GCP (BCR 37)	**5**		**3**	**3**				**5**	**21**	**17 RC, S**	**I**	**MA**			
LA	*5*		*3*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
TX	*5*		*3*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
Tam.	*5*		*3*	*3*				*5*	*21*	*17 RC, S*	*I*	*MA*			
Forster's Tern	**2**	**4**	**3**	**2**	**3**	**2**	16								
Southeast U.S. Region	**2**		**3**	**2**				**5**	**21**	**15 S**	**II**	**PR**	**>66 us-can (66 gl)**		
EP (BCR 20)	**2**		**3**	**2**				**3**	**19**						
OP (BCR 21)	**2**		**3**	**2**				**3**	**19**						
WGCP (BCR 25)	**2**		**3**	**2**				**3**	**19**						
MAV (BCR 26)	**2**		**3**	**2**				**3**	**19**						
SECP (BCR 27)	**2**		**3**	**2**				**5**	**21**	**15 S**	**II**	**PR**			
SACP	*2*		*3*	*2*				*5*	*21*	*15 S*	*II*	*PR*			
EGCP	*2*		*3*	*2*				*5*	*21*	*15 S*	*II*	*PR*			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
APPS (BCR 28)	**2**		**3**	**2**				**2**	**18**						
PIED (BCR 29)	**2**		**3**	**2**				**2**	**18**						
PENFL (BCR 31)	**2**		**3**	**2**				**5**	**21**	**15 S**	**II**	**PR**			
CENFL	*2*		*3*	*2*				*5*	*21*	*15 S*	*II*	*PR*			
STFL	*2*		*3*	*2*				*5*	*21*	*15 S*	*II*	*PR*			
TAMB (BCR 36)	**2**		**3**	**2**				**2**	**18**						
GCP (BCR 37)	**2**		**3**	**2**				**5**	**21**	**15 S**	**II**	**PR**			
LA	*2*		*3*	*2*				*5*	*21*	**15 S**	*II*	*PR*			
TX	*2*		*3*	*2*				*5*	*21*	*15 S*	*II*	*PR*			
Tam.	*2*		*3*	*2*				*3*	*19*						
Bridled Tern	**4**	**4**	**3**	**2**	**3**	**3**	19			**14 CC c**					
Southeast U.S. Region	**4**		**3**	**2**				**3**	**22**	**16**	**I**	**PR**	**100 us-can (10 gl)**		
SECP (BCR 27)	**4**		**3**	**2**				**3**	**22**	**16**	**I**	**PR**			
SACP	*4*		*3*	*2*				*3*	*22*	*16*	*I*	*PR*			
EGCP	*4*		*3*	*2*				*2*	*21*	*15*	*I*	*PR*			
PENFL (BCR 31)	**4**		**3**	**2**				**3**	**22**	**16**	**I**	**PR**			
CENFL	*4*		*3*	*2*				*3*	*22*	*16*	*I*	*PR*			
STFL	*4*		*3*	*2*				*3*	*22*	*16*	*I*	*PR*			
GCP (BCR 37)	**4**		**3**	**2**				**2**	**21**	**15**	**I**	**PR**			

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
LA	*4*		*3*	*2*				*2*	*21*	*15*	*I*	*PR*			
TX/Tam.	*4*		*3*	*2*				*2*	*21*	*15*	*I*	*PR*			
Sooty Tern	**3**	**2**	**3**	**2**	**3**	**2**	15								
Southeast U.S. Region	**3**		**3**	**2**				**4**	**19**				**100 us-can (10 gl)**		
SECP (BCR 27)	**3**		**3**	**2**				**3**	**18**						
SACP	*3*		*3*	*2*				*3*	*18*						
EGCP	*3*		*3*	*2*				*2*	*17*						
PENFL (BCR 31)	**3**		**3**	**2**				**4**	**19**						
CENFL	*3*		*3*	*2*				*4*	*19*						
STFL	*3*		*3*	*2*				*4*	*19*						
GCP (BCR 37)	**3**		**3**	**2**				**2**	**17**						
LA	*3*		*3*	*2*				*2*	*17*						
TX/Tam.	*3*		*3*	*2*				*2*	*17*						
Black Tern	**4**	**4**	**3**	**2**	**1**	**2**	17								
Southeast U.S. Region	**4**		**3**	**3**				**5**	**22**	**18 RC, S**	**I**	**MA**	**>50 us-can (50 gl)**		
EP (BCR 20)	**4**		**3**	**2**				**3**	**19**						
OP (BCR 21)	**4**		**3**	**2**				**3**	**19**						
WGCP (BCR 25)	**4**		**3**	3				**3**	**20**	**16 RC**	**I**	**MA**			
MAV (BCR 26)	**4**		**3**	**3**				**4**	**21**	**17 RC**	**I**	**MA**			

Species Globally Region, BCR, Subarea	**PT**	**PS**	**TB**	**TN**	**BD**	**ND**	**Subtotal**	**RD**	**Total**	**Combine Score (concern, steward)**	**Tier**	**Action Level**	**Percent Responsibility**	**Estimated Population Category**	**Population Objective Category**
SECP (BCR 27)	**4**		**3**	**3**				**4**	**21**	**17 RC**	**I**	**MA**			
SACP	*4*		*3*	*3*				*4*	*21*	*17 RC*	*I*	*MA*			
EGCP	*4*		*3*	*3*				*4*	*21*	*17 RC*	*I*	*MA*			
APPS (BCR 28)	**4**		**3**	**3**				**2**	**19**	**15 RC**	**I**	**MA**			
PIED (BCR 29)	**4**		**3**	**3**				**2**	**19**	**15 RC**	**I**	**MA**			
PENFL (BCR 31)	**4**		**3**	**3**				**4**	**21**	**17 RC**	**I**	**MA**			
CENFL	*4*		*3*	*3*				*4*	*21*	*17 RC*	*I*	*MA*			
STFL	*4*		*3*	*3*				*4*	*21*	*17 RC*	*I*	*MA*			
TAMB (BCR 36)	**4**		**3**	**3**				**3**	**20**	**16 RC**	**I**	**MA**			
GCP (BCR 37)	**4**		**3**	**3**				**5**	**22**	**18 RC, S**	**I**	**MA**			
LA	*4*		*3*	*3*				*5*	*22*	*18 RC, S*	*I*	*MA*			
TX/Tam.	*4*		*3*	*3*				*5*	*22*	*18, RC, S*	*I*	*MA*			
Brown Noddy	**3**	**3**	**3**	**2**	**3**	**2**	16								
Southeast U.S. Region	**3**		**3**	**2**				**3**	**19**				**100 us-can (10 gl)**		
SECP (BCR 27)	**3**		**3**	**2**				**1**							
SACP	*3*		*3*	*2*				*1*							
EGCP	*3*		*3*	*2*				*1*							
PENFL (BCR 31)	**3**		**3**	**2**				**3**	**19**						
CENFL	*3*		*3*	*2*				*3*	*19*						

Species Globally Region, BCR, Subarea	PT	PS	TB	TN	BD	ND	Subtotal	RD	Total	Combine Score (concern, steward)	Tier	Action Level	Percent Responsibility	Estimated Population Category	Population Objective Category
STFL	*3*		*3*	*2*				*3*	*19*						
Black Noddy	**3**	**4**	**3**	**2**	**3**	**2**	17								
Southeast U.S. Region	**3**		**3**	**2**				**1**							
PENFL (BCR 31)	**3**		**3**	**2**				**1**							
STFL	*3*		*3*	*2*				*1*							
Dovekie	**3**	**3**	**3**	**3**	**4**	**2**	18								
Southeast U.S. Region	**3**		**3**	**3**				**1**							
SECP (BCR 27)	**3**		**3**	**3**				**1**							
SACP	*3*		*3*	*3*				*1*							
Razorbill	**3**	**4**	**3**	**4**	**4**	**3**	21			**14 CC b**					
Southeast U.S. Region	**3**		**3**	**4**				**2**	**23**	**16 RC**	**I**	**MA**	**<10 us-can (5 gl)**		
SECP (BCR 27)	**3**		**3**	**4**				**2**	**23**	**16 RC**	**I**	**MA**			
SACP	*3*		*3*	*4*				*2*	*23*	*16 RC*	*I*	*MA*			